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— EXPLORATORY
PAPERS

— DOCTORAL
COLLOQUIUM

Peace, Dialogue, Coexistence.
Designing for living together.

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PDC2026 WELCOME

PUBLICATION CHAIRS

Many years have passed since the first Participatory Design Conference (PDC) in 1990 and much has changed in our world, but this event remains a landmark forum in the Participatory Design (PD) community. As well as being a significant opportunity for people to come together and meet each other, the conference stimulates submissions providing opportunities for reflection and discussion.

Each edition focuses on a theme that presents a challenge – whether explicit or implicit – for researchers and practitioners in the field. For this reason, the conference Proceedings remain an important reference for many years to come, documenting the evolution of the field. And those from this specific edition will certainly continue to serve as such for a long time, framing further critical reflections on the pivotal role of PD in contemporary society.

This 19th edition of PDC has opened up a discussion on issues that are particularly relevant and timely, both now and in the near future: Peace, Dialogue, and Coexistence. In our fragmented times, these three words represent a really urgent imperative. The challenge today is to take the PD's perspective beyond the realm of academic and industrial research, transforming it into a means of addressing the complexity of the problems facing our world.

The theme of the 19th PDC has, once again, brought the political dimension of the PD to the fore. What emerges is the need for PD to serve as a fair and inclusive framework, one that takes into account the concerns of those with less voice and power, taking a stand for them in seeking a democratic approach to complex problem-solving.

This renewed political dimension of PD invites us to address another aspect that has increasingly characterised recent PDC editions: the endeavour to engage with the perspectives of scholars who are not solely 'internal' to PD. In this edition, this effort has been particularly fruitful, as can be seen from the contents of these Proceedings.

Finally, there remains a strong focus on highlighting, as far as possible, contributions from the Global South, emphasising diverse epistemological perspectives and recognising their crucial value in fostering the growth of the PD community as a whole. Submissions for this edition PDC were over 500 from five continents, across the various categories. Of these, nearly 180 contributions have been included in the Conference and in these three volumes of the Proceedings. This huge collection of material is an enormous potential for the future of PD as a discipline capable of transforming our world into a better place.

This second volume contains 53 Exploratory Papers and 38 Doctoral Colloquium submissions. Doctoral Colloquium submissions address topics related to participatory design theory, practice, and methodology, with particular attention to the conference's overarching theme and specific topics, including global systems and local experiences. They present ongoing PhD research and have been single-blind reviewed by the Doctoral Colloquium Chairs. Exploratory Papers provide early formative insights from theory or practice and present original ideas that aim to expand the participatory design field. The papers were double-blind reviewed by at least two PC members in one review round. Full and Exploratory papers are organized into *conversations*, that is, experimental formats of presentation and discussion of the papers based on triggering questions and authors' interactions. Conversations are built around seven sub-themes: Conflicts and participation; Democracy and participation; Democracy and Participation: Inclusion; Civic issues and participation: urban matters; Civic issues and participation: sustainability; Post-Anthropocentrism and Participation: AI; Post-anthropocentrism and participation: multispecies. These conversations highlight the richness of the topics discussed in these Proceedings.

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Forms of Experimentation across Exploratory Papers

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Abstract

This positioning paper takes a step back to look at exploratory papers that were selected for PDC 2026, and it finds some common themes in how they experiment with Participatory Design. Instead of focusing on specific topics, these papers together explore the bigger questions about how participation works, like what it means to participate, who gets to participate, and how we can make participation more inclusive and durable. This positioning paper identifies six main areas where these experiments are happening: thinking of participation as a way of being rather than just a method, considering non-human actors as important participants, designing for situations where there are conflicting interests, building infrastructure to support participation as a political act, challenging traditional ways of knowing and making meaning, and focusing on long-term commitments that go beyond individual lifetimes. These areas aren't fixed or separate, but rather they overlap and evolve together. When we look at all exploratory papers together, we get a sense of a field that is actively questioning its own foundations and trying to find new ways to work together in a world that is constantly changing. This positioning paper argues that this kind of experimentation is not just something that happens on the side, but it is actually a key part of what makes Participatory Design able to navigate complex social and technical issues and build collective futures.

CCS Concepts

• Human-centered computing; • Interaction design; • Interaction design process and methods; • Participatory design;

Keywords

Participatory Design, Experimentation, Infrastructure, Agonism, Coexistence

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1 INTRODUCTION: EXPERIMENTATION AS A MODE OF DISCIPLINARY RENEWAL

Participatory Design (PD) has never been a field that advances through linear accumulation. Its history is marked by discontinuities, tensions, and repeated acts of redefinition. From the early Scandinavian engagements with workplace democracy to contemporary forms of civic participation, public-sector innovation, and socio-ecological transition, PD has grown through situated experiments that test not only methods but also values, alliances, and assumptions. Experimentation, in this sense, is not an accessory to the discipline; it has functioned as a mode of disciplinary renewal, enabling PD to confront shifting relations among technology, institutions, publics, and everyday life.

It is important to clarify from the outset that the forms of experimentation discussed in this positioning paper should not be understood as entirely new thematic territories within PD. Many have long genealogies in the field. Infrastructuring participation has been central to PD's evolution for more than a decade [9, 17, 27]. Agonistic participatory design has foregrounded conflict as constitutive rather than aberrational [2, 23, 24]. Feminist, decolonial, and care-oriented traditions have insisted on the epistemic and ethical dimensions of participation [6, 14, 26]. More-than-human perspectives have drawn on relational ontologies and STS traditions to destabilize anthropocentric assumptions [1, 15, 19, 28].

What distinguishes the present moment is not novelty, but recomposition and intensification. These lineages are being reassembled in response to overlapping crises—climate breakdown, democratic erosion, algorithmic governance, geopolitical conflict, and epistemic fragmentation. The theme of PDC 2026—Peace, Dialogue and Coexistence—makes this conjuncture explicit. Peace cannot be reduced to the absence of direct violence [14]; dialogue cannot be assumed as neutral deliberation [8]; coexistence cannot be romanticized as harmony, but must be negotiated across difference, inequality, and conflict [23, 25].

The exploratory papers selected for PDC 2026 are particularly revealing in this regard. Exploratory contributions often occupy a distinctive epistemic position: they may be less invested in consolidating results and more committed to probing uncertainty. They commonly articulate work in progress, conceptual proposals, methodological provocations, or early empirical insights. This does not make them weaker as scholarly contributions; rather, it makes them sensitive indicators of where the field is trying to go, what it is struggling to articulate, and which questions are becoming unavoidable.

A transversal reading of these papers suggests that what is emerging is not simply a set of novel topics. Many of the themes addressed—democracy, inclusion, care, technological mediation, institutional change, ecological crisis—are not new to PD. What is

new is the way in which these themes are being approached: the underlying conditions of participation are being reworked. The contributions collectively explore how participation is sustained or undermined, how agency is distributed, how infrastructures shape power, how knowledge becomes legitimate, and how time is conceptualized within participatory processes. In other words, the field appears to be experimenting with the structural premises that enable participatory practice.

This positioning paper does not summarize individual contributions, nor does it attempt to rank or typologize them exhaustively. Instead, it identifies recurring forms of experimentation that traverse the exploratory papers. These forms are not mutually exclusive; their boundaries are blurred. They overlap, intersect, and sometimes contradict one another. They are best understood as emerging configurations, still in motion, rather than stable categories. They offer a snapshot—a provisional photograph—of a field in transition. Such a photograph is not predictive. It cannot tell us how these forms will evolve, consolidate, or fade. Yet it can help articulate the present terrain of experimentation and the questions that terrain raises.

This positioning paper proceeds in three moves. First, it clarifies the interpretive approach used to read across the exploratory papers, framing this as a form of mapping that remains deliberately non-taxonomic. Second, it articulates six forms of experimentation: participation as condition; expanding agencies; designing within antagonism; infrastructuring participation; epistemic reconfiguration; and temporal reorientation. Third, it draws out implications in the form of open questions and provisional orientations for the future of PD.

Throughout, I maintain two commitments. The first is to treat exploratory contributions as central material for the conference: they are not a margin or an appendix, but a space where PD rehearses possible futures and tests its own boundaries. The second is to avoid turning that rehearsal into a premature synthesis. The aim is not closure, but clarity about what is currently in motion.

2 HOW TO READ A MOVING FIELD: A TRANSVERSAL MAPPING

To speak of “forms of experimentation” is already to make a methodological choice. The choice is not to cluster papers by theme in the conventional sense, nor to reduce them to methodological families, nor to sort them by application domain. Instead, it is to read across them for recurring patterns in what is being tested. In PD, this question matters because “participation” is never only a technique. It is a political arrangement, an epistemic stance, a moral claim, and an infrastructural achievement [9, 18]. A transversal mapping therefore looks for how participation is being reconfigured along these dimensions.

Such a mapping is necessarily interpretive. It involves identifying repeated moves across different contexts: how authors define participation, where they locate agency, what they treat as a medium, how they position institutions, which temporal horizons they assume, what kinds of knowledge they privilege, and how they handle conflict and asymmetry. The mapping is also necessarily partial. The field is larger than fifty-five papers; the papers themselves are partial windows; and the forms of experimentation

identified here are not exhaustive. The point is not to legislate the field’s future but to offer a plausible reading of how PD is currently renewing itself.

This transversal mapping is deliberately not a formal coding exercise. It does not proceed through a predefined analytical grid, nor does it claim the neutrality of a systematic content analysis. Instead, it draws on a qualitative reading practice that is common in disciplinary positioning work: a close attention to recurring conceptual moves, rhetorical framings, and problem formations across heterogeneous contributions. The aim is not exhaustiveness but intelligibility—making visible patterns that might otherwise remain implicit when papers are read in isolation.

To do so, the mapping follows a set of orienting questions that repeatedly surface in PD scholarship: how is participation defined and bounded; where is agency located and how is it distributed; what is treated as the medium of participation (workshops, infrastructures, artefacts, platforms, narratives); how are institutions positioned (as partners, obstacles, sites of negotiation, or targets of critique); what temporal horizon is assumed (project cycles, long durations, intergenerational scales); and what kinds of knowledge are authorized or contested through participatory practice. These questions are not imposed from outside; they are inferred from the papers’ own emphases and from the way they mobilize PD’s conceptual repertoire.

A further limitation must be stated. The exploratory papers selected for PDC 2026 are not the field as a whole. They reflect a particular selection moment, shaped by the conference call, the conditions of contemporary research, and the generative constraints that make exploratory work possible. The mapping therefore does not claim to represent PD comprehensively. Rather, it treats the selected exploratory corpus as a situated window into how the field is currently experimenting with itself. In this sense, the six forms proposed here should be read neither as a taxonomy nor as a definitive diagnosis, but as a provisional lens—useful insofar as it helps articulate what is now becoming difficult to ignore.

The decision to foreground blurred forms rather than discrete categories responds to a recurring tension in PD scholarship. On the one hand, PD often benefits from conceptual consolidation, which helps clarify its commitments and make its claims legible in interdisciplinary arenas [18]. On the other hand, PD risks domesticating its own critical force when it stabilizes too quickly. Exploratory contributions tend to resist such stabilization. They often hold ambiguity, prototype in conceptual form, or articulate provisional propositions. Treating them as blurred forms is therefore consistent with their epistemic character.

Within this interpretive frame, the six forms that follow should be read as overlapping configurations. A paper experimenting with infrastructuring participation might simultaneously experiment with epistemic redistribution; a paper exploring distributed agency might also question temporality; a paper engaging antagonism might reframe participation as condition rather than method. The forms do not compete; they entangle.

3 PARTICIPATION AS CONDITION: FROM EVENTFUL METHODS TO SUSTAINED ECOLOGIES

The first form of experimentation, and arguably the most pervasive across the exploratory papers, involves relocating participation from method to condition. PD has long been associated with recognisable participatory formats: co-design workshops, design games, probes, living labs, participatory prototyping, collaborative scenario building. These formats remain vital. Yet across many exploratory contributions, participation appears less as a discrete event and more as a fragile condition that must be maintained, governed, and cared for. [12]

This shift can be understood as a response to two pressures. The first is temporal: participation rarely ends when the workshop ends. PD practitioners have long noted that participatory processes entail long durations of relationship building, trust negotiation, and institutional coordination. The second is political: participation is increasingly embedded in contexts where institutions are unstable, publics are fragmented, and infrastructures are contested. Under such conditions, participation cannot simply be “organized”; it must be sustained against forces that undermine it.

Several exploratory contributions therefore treat participatory practice as the creation of enabling ecologies. Instead of focusing on the moment of co-design, they focus on what makes co-design possible: the infrastructures that hold an ongoing conversation, the artefacts that circulate and anchor meaning over time, the governance arrangements that distribute responsibility, and the care practices that enable sustained involvement. This resonates with infrastructuring approaches in PD [9, 17, 27], but here the emphasis is on fragility and endurance. Participation becomes a maintenance problem as much as an invention problem.

Seen from this angle, the practical “site” of participation shifts. It is no longer only the co-design session, the workshop, or the intervention, but also the socio-material arrangements that make these events possible and meaningful over time. Participation-as-condition brings to the foreground the work of maintaining access, continuity, and interpretability: keeping channels open, sustaining shared reference points, revisiting decisions, onboarding new participants, negotiating responsibilities, and absorbing frictions without collapsing the process. This work often happens outside the spectacular moments that are easiest to narrate in research accounts, yet it is precisely what determines whether participatory practices remain viable.

This also has consequences for governance. If participation is an ecology, then it requires forms of stewardship that can hold together openness and responsibility. Here, PD’s infrastructuring sensibility intersects with broader discussions on commons-like arrangements and collective resource management [25, 27, 29]. Participatory infrastructures—archives, platforms, protocols, civic media, and shared artefacts—can be understood as resources that must be governed, not merely built. Governance, however, is never neutral: it distributes authority, sets thresholds of access, and determines who can withdraw, contest, or reshape the conditions of participation. The question thus becomes how to design governance that remains responsive and contestable, rather than rigidly procedural.

Participation-as-condition also reframes evaluation in a deeper way than is often acknowledged. Conventional indicators tend to privilege what is countable and time-bounded: attendance, outputs, deliverables, short-term impacts. Yet when participation is understood as a condition, what matters are often qualitative and longitudinal: whether interpretive authority has shifted, whether participants gain sustained capacity to act, whether relationships endure across conflict, whether infrastructures remain legible and accessible, and whether the process can recover from breakdown. These are not easily captured by standard evaluation frameworks, but they are central to the political claims PD often makes.

Finally, participation-as-condition resonates strongly with the conference theme, without needing to make it the paper’s organizing axis. Peace, dialogue, and coexistence are not outcomes that can be “achieved” through a single participatory event; they are ongoing accomplishments that depend on maintenance, repair, and institutional endurance. In this sense, the emphasis on condition does not simply expand PD’s methodological repertoire; it reasserts a foundational insight of the field—that participation is always a fragile achievement, continuously made and unmade.

Understanding participation as condition also complicates PD’s relationship with evaluation. If participation is an ecology rather than an event, then conventional metrics—number of participants, number of sessions, deliverables produced—become insufficient. What matters is the durability of relationships, the redistribution of interpretive authority, the ongoing capacity to negotiate conflict, and the degree to which participatory conditions remain accessible over time. The question is not only whether participation occurred, but whether the conditions that made it possible remain in place, adapt, or collapse.

This form of experimentation also reframes PD’s ethical commitments. When participation is treated as condition, questions of care and maintenance become central. Care scholarship in design and STS has argued that sociotechnical systems are sustained through often invisible labour [3–5]. Exploratory contributions echo this insight by foregrounding the work required to keep participatory conditions alive: coordination, translation, emotional labour, negotiation of institutional procedures, and the cultivation of safe or at least workable spaces of disagreement.

A future-oriented implication follows. If PD increasingly understands participation as condition, the field may need to develop stronger conceptual tools for describing and designing participatory maintenance. What does “participatory durability” mean? How can participatory conditions be protected without becoming exclusionary? How can participation remain open while also accountable? These questions point beyond method to governance and ethics. [7]

4 EXPANDING AGENCIES: PARTICIPATION BEYOND THE HUMAN-CENTERED FRAME

The second form of experimentation concerns the expansion and destabilization of agency. PD has always been shaped by shifting assumptions about who participates. Early PD often presupposed identifiable human groups—workers, users, citizens. Contemporary PD has expanded to communities, publics, marginalized groups, institutional stakeholders, and dispersed networks. Exploratory

contributions extend this further, experimenting with more-than-human and distributed agency.

This expansion takes multiple forms. Some contributions interrogate artificial intelligence and algorithmic systems as mediators of participation, shaping what is visible, how knowledge circulates, and which voices are amplified. Others foreground ecological entities—animals, rivers, forests, atmospheres—as participants whose agency cannot be reduced to human preferences. Still others experiment with material and microbial processes, treating them as co-constitutive forces in practices of design and participation. Place-naming and linguistic ontologies appear as sites where agency is distributed through grammar, animacy, and relational categories rather than individual intention.

These experiments resonate with relational ontologies and more-than-human scholarship [1, 15, 19, 22]. They also align with the broader “ontological turn” in design, where the focus shifts from designing objects to designing relations and worlds [11, 15, 19].

In this frame, agency is not an attribute possessed by discrete subjects but an effect of assemblages. Participation is not merely a matter of inviting actors into a process; it is a process through which actors and boundaries are enacted.

However, the exploratory contributions also reveal how difficult it is to operationalize expanded agency within participatory practice. Nonhuman entities do not speak in conventional deliberative formats. Their agency is often mediated through proxies, interpretive practices, sensors, or representational devices. Artificial intelligence systems complicate authorship, accountability, and transparency. Ecological entities operate on temporal scales that exceed human project cycles. Material processes challenge the idea that agency is intentional.

These challenges generate a set of methodological and ethical tensions. How can PD engage more-than-human agency without turning it into metaphor? How can nonhumans be represented without being appropriated? How can designers claim to work with distributed agency while maintaining accountability to human communities, especially those already marginalized? These tensions are not problems to be “solved” once and for all; they are themselves constitutive of the experimentation underway.

One implication is that PD may need new vocabularies for describing participation when agency is distributed. Terms such as “stakeholder” may become insufficient. The field may need to articulate new modes of attunement, representation, and accountability that acknowledge the limits of deliberation while still sustaining democratic commitments. Exploratory contributions suggest that these vocabularies are emerging, but still unsettled.

5 DESIGNING WITHIN ANTAGONISM: PARTICIPATION UNDER STRUCTURAL CONFLICT

The third form of experimentation situates PD within antagonistic contexts. PD’s relationship to conflict has always been complex. While PD has often been associated with collaborative co-production, its origins are deeply political, rooted in struggles over workplace power and the distribution of expertise. In recent decades, as PD has expanded into public-sector and civic contexts,

it has sometimes been framed through deliberative models emphasizing dialogue and consensus. Yet agonistic theory has long argued that democratic life is constituted by conflict rather than consensus [11, 13]. Exploratory contributions intensify this agonistic sensibility by engaging contexts where conflict is structural and institutions are not necessarily partners.

Across the exploratory papers, antagonism appears in multiple ways. Some contributions confront institutional repression and surveillance, where participatory infrastructures may be targeted, censored, or disrupted. Others address contexts such as carceral institutions, where participation is entangled with coercion and asymmetrical power. Still others engage polarized public spheres, where participation is shaped by distrust, disinformation, and contestation over legitimacy.

In such contexts, participation cannot be assumed to be safe, open, or cooperative. It is vulnerable to capture, manipulation, or suppression. Designers may find themselves positioned not as facilitators of consensus but as protectors of participatory space. The design problem becomes how to sustain contestation without escalating harm, how to enable participation under surveillance, and how to navigate institutional contexts that may instrumentalize participation.

This form of experimentation reopens foundational questions for PD. What does it mean to “participate” in contexts where refusal may be the most meaningful political act? How can PD avoid legitimizing oppressive institutions while still engaging with those affected by them? How can participatory processes sustain conflict as productive rather than destructive? How can designers remain accountable when institutions constrain what can be said, shown, or acted upon?

Agonistic PD scholarship has argued for designing spaces where conflict can be articulated rather than erased [2]. Exploratory contributions extend this by foregrounding the infrastructural and digital conditions of antagonism. Conflict is no longer only discursive; it is mediated by platforms, surveillance systems, and institutional architectures. Designing within antagonism therefore becomes an infrastructural challenge as much as a political one.

A future-oriented implication follows: PD may need to articulate more robust theories and practices for “protective participation”—participation that is not simply inclusive but resilient under antagonism. This includes questions of security, care, and ethics that PD has not always foregrounded.

6 INFRASTRUCTURING PARTICIPATION: FROM PROJECTS TO POLITICAL ARCHITECTURES

The fourth form of experimentation foregrounds infrastructures as political architectures of participation. In PD and STS, infrastructure has long been understood not as a neutral substrate but as a relational accomplishment that shapes what can be done, by whom, and at what cost [19, 27]. Infrastructuring in Participatory Design extends this by emphasizing that participatory processes often require creating or reshaping socio-material arrangements capable of sustaining collective action over time [9, 17].

Across the exploratory papers, participation is configured not only through meetings and workshops but through archives, civic

platforms, data ecologies, dialogic scaffolds, and media infrastructures. These arrangements structure visibility, access, and legitimacy. They shape which voices persist, how knowledge circulates, and how decisions are stabilized. Infrastructures thus become active mediators of participation rather than passive supports.

This aligns with Star and Ruhleder's argument that infrastructures are embedded, relational, and only visible when they break down [27]. In participatory settings, infrastructures are often taken for granted until they fail to hold space for dialogue or collapse under institutional pressure. The exploratory contributions make these infrastructures visible as sites of design intervention and political negotiation.

Importantly, infrastructuring is not only technical but political. Decisions about who maintains an archive, who governs a platform, who defines categories of evidence, or who has access to digital systems are decisions about power distribution. This resonates with Ostrom's work on commons governance [25], which highlights that shared resources require carefully designed institutional arrangements to avoid enclosure or misuse. Participatory infrastructures similarly require stewardship, accountability, and adaptive governance. [2, 16]

However, infrastructuring participation introduces tensions. Infrastructures tend toward stabilization, while participation often requires openness and contestability. Systems designed to protect participants may also limit openness; systems designed for openness may increase vulnerability to surveillance or harassment. Institutional uptake can translate participatory outputs into standardized forms that neutralize dissent [6]. The exploratory papers surface these tensions without resolving them, showing that infrastructuring is itself a site of experimentation.

In relation to Peace, Dialogue and Coexistence, infrastructures become the material conditions that enable or constrain dialogic engagement. Dialogue depends not only on willingness but on systems that sustain interaction. Coexistence requires infrastructures that can hold plural publics over time. Designing such infrastructures becomes a political act that shapes the durability of participation.

A central question emerges: how can Participatory Design build infrastructures that sustain participation ethically and politically while remaining adaptable and resistant to capture?

7 EPISTEMIC RECONFIGURATION: PARTICIPATION AS MEANING-MAKING AND KNOWLEDGE POLITICS

The fifth form of experimentation concerns epistemic reconfiguration. Participatory Design has always implied that those affected by design decisions possess knowledge that matters. Yet knowledge is not simply present to be included; it is structured by institutional norms, cultural assumptions, and power relations [19].

Across the exploratory papers, participation becomes epistemic work. Contributions engage hermeneutical injustice [13], feminist and decolonial epistemologies [11, 26], and relational ontologies [1, 15] to question who defines problems, whose interpretations are credible, and which categories shape collective understanding.

In contexts such as healthcare, migration, environmental governance, and AI design, participatory practices seek to redistribute interpretive authority.

Fricker's concept of epistemic injustice [13] clarifies how individuals can be wronged in their capacity as knowers when dominant interpretive frameworks fail to accommodate their experiences. Several exploratory contributions implicitly address this by expanding collective meaning-making processes. Participation becomes not only decision-making but interpretive negotiation.

This epistemic dimension connects directly to dialogue. Dialogue requires shared interpretive resources; without them, speech does not translate into understanding. When interpretive frameworks privilege dominant groups, dialogue risks reproducing inequality rather than alleviating it. Coexistence, in this sense, depends on epistemic conditions that allow difference to be articulated and recognized.

However, institutional translation complicates epistemic plurality. Bureaucratic systems often demand standardization and comparability. Participatory outputs may be translated into metrics or categories that flatten nuance. As Callon's sociology of translation suggests [4], knowledge does not travel unchanged; it is transformed through institutional mediation.

The exploratory contributions highlight this fragility. Epistemic redistribution is provisional and contested. Participatory Design must therefore grapple with how to sustain plural meaning-making while engaging systems that require stabilization.

This raises a critical question: how can PD design translation processes that maintain epistemic plurality rather than neutralize it?

8 TEMPORAL REORIENTATION: PARTICIPATION ACROSS LONG HORIZONS AND LAYERED TIME

The sixth form of experimentation concerns temporality. Many contemporary challenges addressed by PD—climate change, democratic erosion, technological transformation—unfold across temporal scales that exceed project cycles. Exploratory contributions reflect this by experimenting with long-horizon participation and layered temporalities.

Participation is depicted as unfolding across ecological cycles, generational memory, and iterative infrastructuring. It involves long-term role shifts, where responsibility and agency gradually redistribute among actors. It demands sustained relational labour rather than episodic intervention.

This resonates with scholarship on care and maintenance [20, 26], which emphasizes ongoing labour as central to sustaining worlds. It also aligns with democratic theory that frames politics as continuous negotiation rather than final settlement [23, 24]. Peace, understood through Galtung's lens [14], is not static but a dynamic process requiring continuous effort to reduce structural and cultural violence.

Temporal reorientation challenges performance-driven governance models and short-term funding structures. Participatory ecologies require time to build trust, develop interpretive resources,

and negotiate conflict. Yet institutional systems often demand immediate deliverables. This mismatch is political: it shapes whose participation can be sustained and whose cannot.

Exploratory contributions suggest that PD is increasingly attentive to these temporal politics. Coexistence requires endurance; dialogue requires time; participation requires long-term commitment. Designing for such horizons becomes a structural concern.

A pressing question follows: how can Participatory Design reconcile institutional constraints with the long durations required for ecological and social transformation?

9 CONCLUDING REFLECTIONS: ENTANGLEMENTS AND IMPLICATIONS

The six forms described above are not isolated. They overlap and entangle. Participation as condition often depends on infrastructuring; infrastructuring shapes epistemic redistribution; epistemic plurality requires temporal commitment; designing within antagonism may demand protective infrastructures; expanding agency complicates accountability.

These entanglements generate productive frictions. For instance, expanding agency beyond the human can deepen ethical commitments, but it may also diffuse responsibility. Infrastructuring participation can sustain collective action, but it may risk institutional capture. Designing within antagonism may require limiting openness to protect participants. Epistemic plurality may resist institutional translation, yet institutional engagement may be necessary for material change.

Such tensions are not failures but indicators of a field grappling with complexity. Participatory Design has long navigated trade-offs between empowerment and institutionalization, critique and collaboration, openness and structure [9, 18]. The exploratory papers reveal these tensions intensified under contemporary crises.

Taken together, these frictions suggest that the field's current experimentation is not only methodological but also programmatic. Across the exploratory papers, three shifts become especially visible. First, PD appears to be moving from a focus on participatory "tools" toward a concern with participatory conditions—how participation is sustained, what infrastructures and governance arrangements are required, and how participation remains legible and actionable when it travels across institutional contexts. Second, the locus of critique increasingly targets not only exclusion in the abstract, but the concrete mechanics through which people, perspectives, and forms of life remain outside participatory processes—and the ways in which such "outsideness" is reproduced by time constraints, infrastructural barriers, epistemic conventions, and institutional procedures. Third, PD's engagement with politics is less often framed as a question of bringing more voices into a conversation and more often as a question of designing political architectures: arrangements that can hold disagreement, protect participation under antagonism, and support coexistence across asymmetry.

These shifts help explain why the boundaries among the six forms are blurred. A concern with conditions quickly becomes a concern with infrastructure; a concern with infrastructure becomes a concern with knowledge politics; a concern with knowledge politics becomes a concern with temporality; and antagonism pushes

the field to confront the costs of openness and the ethics of protection. Rather than resolving these tensions, the exploratory papers often hold them in place. This "holding" is itself a form of experimentation: a refusal of premature closure in contexts where the demand for decisive outcomes can easily neutralize complexity.

From this perspective, the six forms should be understood less as stable categories and more as questions-in-motion. They indicate where PD is currently testing its own premises: what participation can mean under conditions of crisis; how dialogue is mediated by infrastructures and epistemic regimes; how coexistence can be enacted without denying conflict; and how design can operate as a political practice without collapsing into either procedural technocracy or moral rhetoric. The value of mapping these forms is therefore not to impose unity, but to make the present landscape of experimentation more speakable—so that future work can engage it critically, extend it, and contest it.

Framing these patterns as blurred forms of experimentation avoids premature synthesis. It acknowledges that PD's future will likely involve ongoing negotiation among these forms rather than resolution into a single paradigm.

The exploratory papers selected for PDC 2026 collectively reveal Participatory Design as a field engaged in structural experimentation. Participation is relocated from method to condition; agency is expanded and destabilized; antagonism is embraced as constitutive; infrastructures are politicized; epistemic plurality is foregrounded; temporal horizons are extended.

These forms are blurred and evolving. They constitute a provisional photograph of a discipline renegotiating its foundations in a moment of global crisis. The photograph is not predictive; it does not determine which forms will dominate. But it provides orientation by clarifying which structural questions are pressing.

In relation to Peace, Dialogue and Coexistence, the forms mapped here suggest that PD is not offering simple reconciliatory tools. Rather, it is reworking the structural conditions that make peaceful coexistence possible under strain. Peace requires reduction of structural violence [14]; dialogue requires epistemic justice [13]; coexistence requires infrastructures capable of holding plural publics over time [27].

For the future of PD, the challenge is not to codify these forms into a closed framework but to sustain the questions they raise. How can participatory conditions endure without becoming exclusionary? How can distributed agency be acknowledged without diffusing accountability? How can participation survive within antagonistic institutions? How can infrastructures remain open yet protected? How can plural meaning-making persist within systems demanding standardization? How can temporal commitments necessary for coexistence be institutionally supported?

Exploratory contributions do not provide definitive answers. They are valuable precisely because they hold these questions open. They show PD thinking in motion—experimenting with its own premises and rehearsing collective futures in uncertain times. In a world marked by instability and fragmentation, sustaining such experimentation is not peripheral to the field. It is central to its ongoing responsibility.

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Hope by Design: The Paradox of Trauma-Informed Co-Design in Carceral Space

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Abstract

Trauma-informed co-design (TICo-D) seeks to center dignity, agency, and safety, promising to reduce re-traumatization and support rehabilitation. Yet in carceral contexts, TICo-D faces a central paradox: does designing in the system humanize injustice by making imprisonment more tolerable, or does it prefigure liberation by affirming alternative social relations? We explore this ethical dilemma through a TICo-D project in a women's prison in Arizona, building on our previous work documenting the design process and outcomes of the carceral education hub. Situating the project within debates in carceral architecture, trauma-informed design, participatory design, and abolition, we question if TICo-D is a liminal practice: reducing harm while risking legitimization of punitive institutions. Our resolution of the paradox relies on differentiating between designing the blueprint for incarceration versus designing interventions to enhance the present experience of incarcerated individuals, while simultaneously working towards long-term restorative justice infrastructure. Promoting temporal agency and an ambiance of care through TICo-D had immediate positive outcomes that illustrate the possible coexistence of working ethically within the system and contributing to restorative justice issues. Drawing on critical literature and reflexive analysis, we propose ethical guardrails for practicing within the prison system, including redistributing power, honestly evaluating harm, and prefiguring alternativeness concretely.

CCS Concepts

• ; • **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design;

Keywords

trauma-informed design, carceral space, restorative justice, incarceration, ethics of design, justice design

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1 Introduction

Walking through the sterile corridors of a women's prison in Arizona—under harsh fluorescent light, echoing concrete, and the unflinching gaze of surveillance—evokes disorientation, hypervigilance, and fatigue. Arriving at the redesigned hub, a community classroom that students were tasked with co-designing in a service-learning interior design studio, felt like stepping into another register of space—what participants described as a rare “haven” within the prison. Before our project was implemented, the room carried the same atmosphere of neglect as the rest of the prison: broken furniture, dim flickering lights, and reflective acoustics that amplified every sound. Yet it was this very space that would later be reimagined through trauma-informed co-design (TICo-D), transformed into an environment that officials said felt unlike any prison they had ever seen.

In publishing a critical reflection on our process, we were challenged by one of the anonymous reviewers to think about the ethical imperative of designing within the prison system [30]. In this paper, we invoke this provocation by revisiting our design site and by situating our reflexive practice at the nexus of existing scholarship on designing for incarceration. We question: do trauma-informed interventions in carceral settings grant dignity without challenging mass incarceration, or do they create cracks in the system—moments of agency and healing that prefigure alternatives? In short, are we designing better cages or pathways beyond them?

2 The U.S. Carceral Landscape

The United States has the highest incarceration rate among developed countries, with over two million people confined in prisons and jails [46]. Women represent the fastest-growing segment of this population, with racialized disparities that render Black and Indigenous women disproportionately incarcerated [41]. Conditions across U.S. facilities remain marked by overcrowding, solitary confinement, and limited access to healthcare or rehabilitative programming, reinforcing what scholars describe as a punitive rather than restorative model of justice [1, 15].

In contrast to European contexts, often celebrated as “exceptionalist” or humane, even seemingly progressive initiatives in the U.S. remain embedded within punitive logics [35]. Reports from the U.S. Department of Justice underscore this contradiction: rehabilitation is routinely affirmed as a goal, yet punitive regimes that undermine dignity continue to be endorsed [44].

Beyond confinement itself, U.S. prisons rely heavily on coerced or undercompensated labor. Incarcerated people are often paid between a few cents and a few dollars per hour for work that



Figure 1: Existing Conditions of Multi-Purpose Room

sustains both the institution and, through private contracts, external industries [37, 41]. This economic exploitation further exposes the contradiction at the heart of the American penal system: a rhetoric of rehabilitation sustained by structures of deprivation and control.

Arizona exemplifies these national dynamics. Its prison system is among the largest and most punitive in the country, with persistent failures in rehabilitation and compliance documented in recent audits [3]. Against this backdrop, our project unfolded in a women’s correctional facility, offering a lens into the possibilities and limits of trauma-informed co-design within such a system.

3 Case Context: A Women’s Prison in the U.S. Southwest

Our TICO-D project took place in a medium-security women’s prison in the U.S. Southwest. As of late 2024, the facility held more than 3,300 women, making it one of the largest of its kind in the country. Like many carceral environments, it faces systemic challenges, including overcrowding, limited programming capacity, and persistent failures in meeting rehabilitative mandates, as documented in compliance audits of the state’s Department of Corrections, Rehabilitation, and Reentry [3].

3.1 Project origins

The initiative emerged from a graduate service-learning studio in interior architecture, developed in collaboration with faculty colleagues, students, correctional staff, and incarcerated women. The project aimed to transform a 1,000-square-foot multipurpose room that had previously served as an education space, meeting room, and activity hub. The existing environment was characterized by harsh acoustics, broken and cumbersome furniture, dim and flickering fluorescent lighting, and partially painted walls (Figure 1). Participants described the environment as a daily reminder of neglect and disinvestment.

3.2 TICO-D as guiding framework

Trauma-informed co-design (TICO-D) adapts principles from trauma-informed care into co-design practice, emphasizing emotional and psychological safety, choice, collaboration, empowerment, and trust-building [30]. In this project, TICO-D shaped both the structure of engagement and the facilitation of the design process. A series of co-design workshops brought incarcerated women and university students together through multiple modes of expression, including discussion, drawing, storytelling, and symbolic exploration.

3.3 Design process

Participants were invited to articulate preferences and authorship across material, spatial, and aesthetic dimensions—such as color palettes, mural imagery, furniture arrangements, and biophilic elements—countering the routine loss of choice that characterizes everyday prison life. Wherever possible, decisions were framed as negotiable rather than prescribed, foregrounding participant control within the limits of the setting.

In applying the process, institutional constraints were made explicit. Non-negotiable security requirements, such as prohibitions on ceiling-hung objects, or the need to maintain clear sightlines for surveillance, were addressed transparently and reframed as shared design problems rather than unilateral refusals. This approach aligns with participatory design scholarship that emphasizes the ethical importance of naming power asymmetries rather than masking them [5, 45]. Participation, in this sense, was neither total nor illusory; it was structured, partial, and negotiated.

Practices that supported safety and trust were central to the TICO-D framework. Workshops established shared expectations around respect, confidentiality, and emotional care. Continuity of engagement and follow-through on participant suggestions reinforced trust, while transparency around decisions made outside



Figure 2: Redesigned Multi-Purpose Room with the Trauma-Informed Co-Design Framework



Figure 3: Co-Designed Mural Elevation Developed Through Trauma-Informed Co-Design Workshops

participants’ control prevented false promises. Framing involvement as co-authorship rather than consultation was critical, reflecting trauma-informed facilitation practices that seek to avoid re-traumatization through extractive participation [8, 21].

Participant authorship was most visible in the elements they directly shaped. Incarcerated women co-designed the themes and imagery of the mural, selected biophilic elements and colors, and influenced decisions around storage, seating, and spatial configuration (Figures 2 and 3). These moments of authorship carried particular weight in a system that routinely restricts decision-making. While modest in scale, they represented meaningful assertions of voice and creative agency within an environment structured to limit both.

3.4 Design outcome

Outcomes were evaluated through a TICO-D lens that extended beyond functional performance to affective and relational dimensions.

Participants described feelings of pride, ownership, and legacy, alongside the emergence of personal and collective narratives tied to the space. Observed emotional and relational shifts—among participants and between participants and visitors—suggested that even small-scale environmental changes can produce symbolic and affective impact when designed through care and collaboration.

4 Designing Punishment, Designing Care

Prison interiors are not neutral containers; they actively shape how punishment is felt and how state power is legitimized. In the U.S., design logics have long privileged surveillance and control—from the regimented discipline of the Auburn and Pennsylvania systems to panopticon-influenced layouts and, later, supermax facilities that intensify isolation. Even under the banner of “rehabilitation,” spatial arrangements have frequently reproduced deprivation and exclusion [32, 36]. Read alongside histories of carceral design [17,

25, 38], today’s facilities can be seen as an accumulation of these punitive traditions rather than a departure from them.

Recently, there has been a shift in the way prison design is perceived. From the outset, carceral architecture has drawn on the theatricality of civic and judicial buildings, projecting state authority and legitimacy through spatial imagery [33, 40]. Contemporary debates continue this lineage, showing how prisons cultivate legitimacy not only through official mission statements but through the “moral performance” of everyday interactions [26]. Crewe extends this point by demonstrating how “soft power”—incentives, graduated privileges, and relational authority—makes environments appear humane while deepening compliance [9]. Engström and van Ginneken’s systematic review reinforces this dynamic, finding that “humanizing” design features such as normalized living quarters or therapeutic spaces can bolster perceptions of legitimacy even when deprivation persists [13]. In this sense, legitimacy is curated as much through penal practice, reinforcing authority even as design interventions promise reform. Together, these accounts reveal the stakes for TICO-D: interventions may improve material and social climates, but they also risk shoring up the legitimacy of the penal system itself.

Critiques of the “healthy” or “humane” prisons, especially in the Nordic context, have highlighted legitimacy as a concern for this typology of prisons. Halden Prison in Norway, for example, incorporates natural light, green space, and normalized living conditions, presenting an alternative aesthetic of dignity and normalization. Similarly, Denmark’s Storstrøm Prison has been praised for its “humane” design but critiqued for reinforcing normalized isolation [35]. Yet scholars caution that even these environments remain embedded in systems of confinement and control [23, 35, 39].

Trauma-informed design (TID) has recently entered custodial spaces as a framework for reducing re-traumatization and supporting resilience [2, 27, 34]. TID adapts principles from trauma-informed care into the built environment with the founding of the Trauma-Informed Design Society. Safety, trust, collaboration, empowerment, and choice are key principles that reduce re-traumatization [27]. Neuroscience-informed design strategies—such as creating enriched sensory environments, opportunities for agency, and safe retreat spaces—also support resilience [34]. Empirical studies demonstrate that trauma-informed environments can lower stress biomarkers, reduce incidents of behavioral escalation, and improve perceptions of safety among residents in custodial and residential care settings [14, 22]. Extending beyond prison, TID has shown promise in both youth and women’s settings [2, 24]. In post-carceral contexts, Brisson and Macur found that trauma-informed design in supportive housing fostered health and well-being among people formerly experiencing homelessness [6]. By extension, such findings suggest parallels for prisons, where design for safety and agency may support dignity but remain bounded without structural change.

Co-design adds another layer to trauma-informed practice [30]. Massimi [18, 28] documents participatory approaches in Italian prisons, showing that these methods can generate new programming and social innovations, even when material constraints limit architectural change. Similarly, Farrell [16] and Treacy and Martin [43] identify persistent challenges of power imbalance and security

restrictions in these co-design practices, underscoring that participation itself does not guarantee justice. To avoid reproducing harm, trauma-informed facilitation is critical [21]. As Costanza-Chock reminds us, co-design is not liberatory by default; unless marginalized communities set the agenda and benefit from outcomes, participatory processes risk reinforcing inequities [8]. Volkmann et al. [45] analyze power relations in participatory design, demonstrating that without explicit redistribution of decision-making authority, co-design can reinforce existing hierarchies rather than dismantle them.

While scholars caution that participation does not guarantee justice and often risks reproducing inequities [8, 45], our project made these tensions visible in practice. Participation was simultaneously empowering and constrained: incarcerated women co-authored symbolic elements such as mural imagery and plant selection, yet the institution ultimately defined the agenda through strict security protocols, determining what forms of authorship were permissible. This partial redistribution of decision-making highlights the ambivalence Costanza-Chock identifies—participation produced dignity and agency, but always within limits that risk reinforcing inequities rather than dismantling them [8].

5 The Paradox of TICO-D

Debates over trauma-informed and participatory practices in prisons cannot be separated from the larger tension between reform and abolition. Even when design interventions claim to humanize, prisons remain coercive institutions. Initiatives marketed as “healthy” or “humane” often promise care but obscure the persistence of punitive logics—an “architecture of hope” that creates the appearance of healing while leaving carceral control intact [23]. The psychological limits of imprisonment further constrain reform, with decades of research showing that isolation, surveillance, and deprivation undermine dignity and well-being regardless of surface-level improvements [20]. Incremental changes, such as brighter lighting or expanded in-cell programming, rarely disrupt these underlying dynamics [4]. Environments that appear to enhance fairness or opportunity can instead mask deeper harms, since legitimacy in prisons remains tightly bound to control rather than justice [26].

By contrast, abolitionist perspectives insist that design must move beyond softening carceral conditions toward building alternatives outside prison walls. Grounded justice, as articulated in abolitionist scholarship, envisions decriminalization, reinvestment in community supports, and the design of safe harbors and preventive infrastructures that preempt the need for incarceration altogether [29]. Practitioners like Deanna Van Buren at *Designing Justice + Designing Spaces* embody this outlook by reimagining restorative, community-based environments that displace punishment with care [42]. These visions align with abolitionist thinkers like Angela Davis, who frame justice not as the reform of punitive systems but as the cultivation of alternative infrastructures of safety and collective flourishing [10].

Our project crystallized these tensions, forcing us to ask directly: *what does it mean to design ethically inside an institution that can itself be unjust? Do such interventions merely humanize injustice, or do they rehearse infrastructures for a de-carceral future?*

6 Resolving the Paradox, Designing Within Harm, and the Ethics of TICO-D

We resolve this ambivalence by reinventing Mohapatra’s (2020) question: “*Good design for whom?*” [31]. In our project, we introduced a design intervention to an already existing prison that actively limited women who were currently imprisoned from reaching their full potential. This modification to an existing problem is distinctive from endorsing mass incarceration and designing blueprints for expanding its facilities. We compare this design intervention to Inside-Out educational programs that offer current incarcerated individuals’ relief and opportunity for self-actualization.

Here, the scope and nature of the design problem define the extent of the paradox. When designing infrastructure for expanding incarceration facilities, the design problem is in essence how to contain a large number of people in a facility at a low cost, under the guide of humanity. We perceive this stance to be inherently contradictory and flawed because it expands a system that has proven to be dysfunctional. The primary beneficiaries of this type of design are the decision-making stakeholders including public or private corporations that seek to mass incarcerate people for profit rather than investing in an infrastructure that would support restorative justice.

On the contrary, design interventions to existing incarceration facilities where people are actively, presently being impacted by the harms imposed by the built environment is different. Our goal as designers was to introduce minor elements of trauma-informed design, through a co-design process, that would ease the experience of *already* incarcerated individuals who will serve their sentences anyway. This approach, unlike abolitionist approaches, is time-sensitive in acknowledging the presently urgent needs of a large number of incarcerated individuals in the U.S. It also acknowledges that the system in itself actively produces trauma. However, it views the immediate effects of the TICO-D intervention as deeply meaningful as they place incarcerated people at the center of the design process, easing their neglect and fostering their agency, a different intent from designing a prison that did not previously exist. In our project, the design intervention brought two dimensions of practice to light, temporal agency and the ambiance of care, showing the potential of incremental design interventions.

6.1 Temporal agency

The TICO-D intervention centered the incarcerated women’s agency throughout the project duration. They confidently suggested changes—even when our proposals overlooked prison realities, such as restrictions on ceiling-hung art. Their input was critical in actualizing the project. These practices gave the women agency in the timeframe of the project, challenging their expected role within the prison system [30]. Our role as designers also shifted to become co-creators: practicing humility, listening, and recognizing the women’s lived experience as expertise. This reframing of temporality highlighted that even short-lived participation can carry meaning, though always bounded by the prison’s protocols. Design is grounded in political practices. It is not just about creating artifacts but about engaging in meaningful processes of participation [5]. In our process, incarcerated women were engaged as co-creators in a democratic setting.

6.2 Ambiance of care

If temporal agency captures the act of *doing* design within constraint, the ambiance of care reflects the *feeling* of that design once lived. The proposed design project, in its essence, infused the prison with a bidirectional ambiance of care. The first was evidence in how women felt that they were cared for and are receiving design services, that are often perceived to be luxurious services. Design was the material manifestation of—we matter. The women frequently described the redesigned classroom as “different air”—a place that felt calm, cared for, and, above all, *theirs*, unlike other areas of the same prison.

The second direction of care was witnessed in women’s care for fellow incarcerated women, current and future. Women with release dates approaching spoke of leaving behind something meaningful for those who would remain, transforming the project from an assignment into a legacy of mutual regard. Their care for one another, and for the space itself, mirrored the care extended by students and designers—a reciprocal recognition seldom visible within punitive settings.

This atmosphere of care was not incidental; it was materially constructed. The whitewashed walls, biophilic planters, and movable furniture reconfigured the room’s spatial legibility, softening the institutional harshness of fluorescent light and echoing concrete. In our case, these modest material choices—plants, light, texture, movement—made the difference between a punitive classroom and one that offered, however briefly, a sense of belonging.

Taken together, these dimensions—temporal agency and the ambiance of care—illustrate the positive outcomes of community-focused design interventions within the prison system. Within prisons, design is still confined within the larger framework of incarceration; however, its gestures of care are also instruments of control. Yet they matter. They remind us that meaning, even under confinement, is a spatial act: a wall repainted, a chair repositioned, a mural co-authored. These are not reforms of the system but refusals of its totality. To design within harm is to work inside contradiction—to make space for survival and imagination in a context built to suppress both.

7 Discussion: Hope as a TICO-D Deliverable

Guzmán et al. note [19] that people routinely make moral trade-offs, balancing dignity in the present against complicity with structural harm. This paper highlights this ambivalence directly by questioning: does designing within prisons inevitably involve such moral trade-offs? We articulate our stance by differentiating between design interventions and incarceration facilities design, and by outlining the positive outcomes of our design intervention. When applying a TICO-D framework, the process fostered temporal agency and delivered hope through an ambiance of care. These modest, yet consequential enhancements to the lives of incarcerated women do not contradict the pursuit of long-term restorative justice solutions; rather, they show how harm reduction and abolitionist aspirations can coexist in practice. This echoes Cooper and Smith’s findings on how co-design and creative practices within prisons can function as “lifelong learning” interventions that provide immediate benefits while also rehearsing restorative, community-oriented futures [7]. In our case, the redesigned classroom offered both a reprieve from

punitive norms and a glimpse of alternative possibilities, even as it remained embedded in carceral logics.

Hope emerged as the central deliverable in our project. Participants described the space as part of their legacy; here, that legacy is read as hope infrastructure. Hope affirmed dignity and imagination. Hope, in this sense, is both method and material—scaffold and surface, process and product. What, finally, do designers owe to hope? Can hope be architecture—painted into murals, planted in corners, arranged through furniture? In this project, hope became infrastructure: it organized experience, sustained dialogue, and offered fleeting glimpses of dignity. While the punitive nature of prison does not vanish with these interventions; it is ethically managed through conscious delivery of care, temporality, and shared authorship of space. Design can momentarily invert the logics of punishment—showing that legitimacy can be conferred through care rather than control. These 1,000 square feet operate as both a practical intervention and a prototype for de-carceral futures: a spatial rehearsal of restoration, dignity, and justice as lived experience. Perhaps TICO-D's most enduring contribution is not a resolution of the justice problem but crafting an ambiance of care—the ability to design with and for hope, even when hope itself is unstable. Perhaps hope—not programs or walls—is the only thing worth building in places designed to extinguish it. This is our attempt to use design, its ethical contradictions, to create an ambiance of care within confinement. This differs fundamentally from designing new prisons. To dismiss such hope, as articulated by the incarcerated women themselves, as cosmetic or collateral is to disregard women's role in sustaining their own agency to decide what is easing their present experience in prison.

Despite our belief in design interventions as a form of relief through temporal agency and care, to embrace prison designs as a whole uncritically is to ignore its complicity in fostering injustices. Practicing trauma-informed co-design (TICO-D) in carceral systems entails a dual responsibility. On the one hand, designers must mediate conditions of imprisonment—creating spaces that offer retreat, dignity, and co-authorship for those *currently* confined. On the other hand, designers must imagine and contribute to infrastructures that make imprisonment obsolete. Restorative justice approaches extend this horizon: the most ethical use of design is not to make punishment livable, but to build futures in which punishment becomes unnecessary. When designers reimagine infrastructure oriented towards restorative rather than punitive aims, design's potential expands beyond containment.

McLeod's concept of *grounded justice* calls for investment in decriminalization, community-based supports, and preventive systems that address harm without confinement [29]. Projects such as the *Restore Oakland Center*—which integrates restorative justice practices with job training and community gathering [11]—and the *Atlanta Reentry Campus* [12]—which provides housing and support networks for returning citizens—illustrate how design can cultivate restoration, care, and resilience outside prison walls. Together, these examples and our own intervention suggest that TICO-D prototypes for what justice might look and feel like when designed through care.

7.1 Toward guardrails for TICO-D practice

Echoing Mohapatra and the imperative to ask good design for whom? [31], we offer these practice-tested heuristics to help designers practice reflexivity when having to design within the prison system.

Redistribute power: Incarcerated participants should shape agendas, not only aesthetics. In our site of practice, women's refusal of ceiling-hung elements forced the team to adapt to institutional realities, centering lived expertise over designer preference. This moment demonstrated how power can be reallocated through even modest interventions as acts of ethical negotiation.

Evaluate harm honestly: Interventions must be judged by whether they reduce harm or disguise it. Reflexivity and humility are central to ethical design practice; designers must move beyond conventional metrics of "improvement" to assess how their work interacts with systems of control. In this sense, accountability is not about purity but about remaining alert to complicity—holding both the harm reduced and the harm sustained in view.

Prefigure alternatives concretely: Projects should cultivate capacities transferable to life beyond confinement. The biophilic elements, flexible furniture, and mural rehearsed environments of care and collaboration, gesturing toward restorative spaces such as schools, reentry hubs, or community centers. These choices not only changed the atmosphere inside the classroom but also rehearsed legitimacy through care—modeling what de-carceral design can look like when justice is built, not enforced.

Together, these principles hold space for a dual responsibility: addressing present harm while refusing to naturalize carceral futures.

8 Conclusion

This study set out to examine what design can responsibly do inside a prison. Our project showed that carefully negotiated changes can reshape a room's atmosphere and how people relate within it. What they cannot do is reconfigure the institution itself. Holding both truths at once sharpened our ethical stance: the work mattered to the people who used the space, and its meaning was not diminished by the limits that surrounded it.

Participants spoke about leaving something behind for others—a mark that says, "we were here" and "we made this together." We read that impulse as a form of civic authorship: not redemption, not reform, but a small, durable contribution to collective life under constraint. The value of the project rests less in decoration than in the social practices it made possible—making, caring for, and handing over a place that invites gentler ways of being with one another. This gesture—both temporal and aspirational—illustrates how TICO-D can operate as a prototype for de-carceral futures: a spatial rehearsal of restoration and legitimacy conferred through care rather than control.

For designers, the charge is plain. When working inside carceral systems, choose interventions that can be stewarded locally, that redistribute voice during the process, and that carry skills and practices outward when people return home. The measure of success is not spectacle, but whether the work leaves a trace others can keep building on. If design has a promise here, it is this modest one: to help people craft something worth inheriting, even in a place that

was never meant for flourishing. Hope, fragile and ambivalent, is both the risk and the inheritance. TICo-D's enduring value, then, lies not only in what it built but in what it imagined—a bridge between the architectures of confinement and the architectures of hope.

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Participative Intimacy in/as Design for Coexistence

Affective Prefiguration Politics and Collaborative Futures

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Abstract

In a year when our community asks “How can participatory design facilitate coexistence?”, we respond by discussing an intimacy born of working collaboratively, examining the political aspects of the affective charge of trying other ways of being. The paper builds on the interest of participatory design (PD) in the nuance of co-creation to offer two concepts: *Affective prefiguration* to describe creating interpersonal states ahead of a world in which they are commonly experienced. *Participative intimacy* is one such type of state, relevant to PD, when people find meaning in meeting and creating together. Using these terms enables us to notice – and thus promote – the particular collaborative opportunities for working with imagination and reflection that design brings to our future-making. The paper ends with suggestions for how we might deliberately create the conditions for intimacy to develop.

CCS Concepts

• Human-centered computing → Participatory design.

Keywords

Futuring, Intimacy, Politics, Coexistence, Affective Prefiguration

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1 Introduction

How can participatory design facilitate care-filled coexistence? Light [38] calls the process of encountering not just new feelings, but ways of feeling, affective prefiguration to draw attention to the possibility of invoking anticipatory practices of feeling and challenge current catastrophe narratives (e.g.[43]). Here, we look at one form of this with the idea of participative intimacy. Although we accept that neither experience, in general, nor intimacy, in

particular, can be created by design, we discuss what is meant by these terms as a provocation for others to think with. Our context for this is collaboration in designing as a means to explore possible future ways of being, allowing us to bring aspects of these worlds into being. The rest of the paper describes a background of affective work in participatory design (PD), the inception of the terms and their potential use. Before continuing, we note the authors are based in Europe and write from a position and privilege where it is possible to research and plan without wholesale interference from weather, global politics or the state.

2 Background: Relations in PD

Marking a move to analyse PD in specifically relational terms, Light and Akama wrote about ‘structuring future social relations’ in 2014 [39]. But PD has always been concerned with relations between beings as well as the tools or systems that may be the focus or outcome of research. Early PD in workplaces addressed the politics of managers and employees alongside computerisation [54]. More recently, human-world relations have become a bigger focus, with, for instance, ReWorliding [32] and The Tree as Method [47], sensitisation to pluriversality [16] and more-than-human [31].

Alongside this, there has been a turn to on-the-ground relations: capacitating communities, infrastructuring [33], institutioning [55] and other forms of sociotechnical and cultural change-making that meet PD’s ambitions for collective opportunity to work inclusively for betterment. Democratic design experiments [11] produced socio-political outcomes, as has PD futures research (e.g.[22]). Kuenen advocates for an ‘aesthetic of futuring’ in design to point to ‘open-ended futures’ ([34]:231) and Neuhoﬀ and colleagues’ [44] systematic review calls for more public futuring for social learning: i.e. one branch of PD has concerned itself with how we relate, reflecting well-established principles to support people ‘in conceiving and enhancing their own life collaboratively’ [19].

Further, PD concerns itself with emotional wellbeing. However, emotion is not a key focus [5], more an assumed input, outcome or byproduct of designing. For instance, when Wang et al [58] mention older adults identifying ‘positive social experience’ in working intergenerationally, they comment on it looking sideways in a hackathon process for designing material interventions. We see applied literature on care (e.g.[39],[48],[61],[3],[45]), power (e.g.[50],[14],[49],[62]) and trust (e.g.[64],[37]) rather than theoretical engagement with the production of emotional and affective experience. Notable exceptions are few but significant: Ehret and



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Hollett [23] develop concepts of placemaking and belonging as affective dimensions essential to generating and sustaining change; Frauenberger et al [26] ask how PD ‘can put forward democratic visions of technological futures that connect to people’s hearts’ and Yee et al [63] describe intense – often hidden – emotional and affective labour involved in collaborative mentoring. There are texts discussing types of affect, such as Lindström et al [41] on hope and grief in climate futures; and, addressing researchers’ feelings, Christensen and Ahsan [17] on guilt and shame in doing PD. PD research is full of reaction: disagreements, betrayals, anger, hope and value choices: there is no shortage of feeling. It is rather that it is rarely the point; designing as a practice generally concerns itself with material stressors to be eliminated.

One factor influencing (the absence of) affective focus in PD may be an understanding of affective elements as individual in a domain that addresses the collective, noting that qualities such as care, power, and trust exist in a relation of ‘being between’, i.e. intersubjective qualities. English poorly describes between-ness: Akama introduced the Japanese term ‘*ma*’ [2] for what exists in that allegedly-empty between space, while Luhmann talks of ‘trust in trust’ [42], suggesting people have developed perceptions of what lies there. Cozza’s team [19] point to engineered atmosphere: ‘an emergence that lies beyond the human subject and involves the environment in ways that the human cannot always control’. Stewart speaks of affect regarding fleeting and changeable aspects of existence relating to the complex personal and social dynamics of the political world [53]. Thus, distinctions between affect as personally and collectively felt and/or generated vary and are culturally produced. Here, delving into general affect theory is out of scope; instead, we consider the relational in how we might:

- collectively anticipating and creating future affective states;
- describe and foster positive experiences of work on futures.

3 Affective Prefiguration

Affective prefiguration [38] talks about relatings that do not (much) exist in the present but can be hinted at or sampled through the design of encounter. It refers to a glimpse of how relations could feel, acting as a spur to investigate inaccessible forms of relationality that we might wish for in (post)industrial societies (and which might be present in others). ‘To effect urgent change, we require different capacities for feeling as well as different feelings. Affective prefiguration means giving experience in the present of what else might be emotionally and relationally possible’ (ibid.). Light has argued that adding this extra dimension might invoke a constitutive anthropology [35]: using PD futures work as ‘staged encounters’ to align people in new relations and learn what is possible for them when conditions support a changed way of being (ibid.): what humans together could become and be. As Brandt and Foverskov comment on living labs: ‘co-designing should not be about single situations being mocked-up, but about their interrelated connections and how contextualised and relational practices are materialized and co-produced’ [12].

This chimes with broader definitions of prefiguration, such as Fians’ [25], describing prefigurative politics as: ‘strategies and practices employed by political activists to build alternative futures in the present and to effect political change by not reproducing the

social structures’ they oppose (np); social movements enacting the change they want to see. In PD, prefiguration enters through work by DiSalvo [20], Asad [4] and Gerber and Hegel [28], concerned with different ways of organising. This stresses progressive structures – new economies, different legal systems, replacements for policing – designed to contrast with the mainstream and feed into social practice [46] as applied vision of different infrastructure.

Prefigurative practices, as political, are all about relations. Yet, how people experience each other in forming and being part of prefiguration is commonly seen as adjunct to the material processes of building a better system. An exception is Volpi and colleagues [57], who call for ‘ludic prefiguration’: rekindling the radical political roots of participatory process by leveraging the power of play to test out alternatives, embracing cooperative playfulness to actualise democratic visions.

Affective prefiguration builds on this to point to the emotional texture of prefigured collective life. This gives primacy to evolving relations rather than the structures that might emerge in/through designing. Scrutinising these aspects of engagement (and labelling them) draws attention to under-researched dimensions of cultural change – articulating something hardly visible and easy to overlook if approached with a focus on infrastructure, governance and the politics of distribution – the more normal foci of prefigurative initiatives. Instead, we propose a politics of relating.

This points to the invisible work that takes place in forming and working to bring about change or offer alternatives. It speaks, like Star and Anselm [52] or Yee et al [63], to a form of invisible care work. It differs from pure facilitation in its ambitions, finding an extra resonance in bringing a session into being that can reveal something new. A different relationality is served by articulating and manifesting the changed human-world relations one wants, including with non-human species. If encounters can be staged to create different worlds (with different values), through being able to feel (and help others feel) differently, this allows us to learn our potential as humans by stretching reality to reveal it.

4 Intimacy and Participation

We focus here on affective forms emerging as people (and other beings) come together. Affective prefiguration can reflect terror on hearing about fires, floods, famine, structural violence and other instabilities, in which case it becomes a ‘wake-up call’ – providing a vision of horrors that have not yet afflicted all. But this has not worked to motivate deep-rooted change. Instead, here, we explore a more actively hopeful mode [43], with the potential to capacitate rather than frighten and debilitate.

Relations of togetherness are hard to articulate. Efforts have been made to capture the experience of togetherness particular to performing together. There is work on synchronisation in making performance, such as on how musicians improvise together [15] – a particular kind of ‘betweenness’. We note Bassetti talks of ‘being together in there’ [6], describing collaborative performance and the feeling coming with collective production of coordinated activity. We view this collaborative production through the proposed concept of participative intimacy ([36][40]).

Participative intimacy draws on the work of cultural theorist Berlant, who explores intimacy detached from sexuality and other

forms of tight coupling [9]. Berlant proposes that intimacy could emerge from ‘much more mobile processes of attachment’. She goes on: ‘it is a kind of wild thing that is not necessarily organised that way, or any way. It can be portable, unattached to a concrete space: a drive that creates spaces around it through practices. ... Intimacy seen in this spreading way does generate an aesthetic, an aesthetic of attachment, but no inevitable forms or feelings are attached to it.’ ([9]284-5). This ‘aesthetic of attachment’ relates to what emerges from collaborative production - a form of affective encounter familiar to those in the PD community.

Intimacy is a visceral sense of attachment before valence, judgment, or the like; it is sensory rather than emotional feeling. Drawing on Berlant’s insights, intimacy here refers to a coming-together to experience moments of power that stay as connections between people, forged as shared encounters in a temporary space drawing on mobile processes of attachment. It is an attempt to supply the English language and impoverished cultures of technocracy with the means to draw attention to particular relational feelings, noting these qualities might have a more sustained presence in other cultures, such as South American *Buen Vivir* (e.g.[1]), Filipino *Kapwa* [30] and *Ubuntu* in parts of Africa ([10],[24]). The questions are a) what fosters these attachments in impoverished cultures and b) what concerns are raised in doing so.

4.1 Feeling(s) and Politics of Attachment

We argue that positive ways of relating are critical to development of agency. Nonetheless, promoting intimacy may look devoid of politics or guilty of emptying it out - and PD values justice and inclusion. Sociologist Giddens proposes a link between intimacy and democracy, such that ‘self-disclosure [... involves] a relationship of equals, where each party has equal rights and obligations’ and ‘each person has respect, and wants the best, for the other’ resisting ‘arbitrary power, coercion or violence’ [29]. This suggests what participative intimacy might offer: in agreeing to participate, people are thrown into a negotiation of coexistence without hierarchy, believing others operate in good faith and will co-construct a generous experience together with benign goals. Intimacy, here, speaks to the values of conviviality as a form of between-ness, rather than protections. But it requires an absence of feelings of oppression to emerge, which, in turn, speaks of good facilitation in group spaces.

Within these encounters, there is always more nuance. We do not suppose all attachment is positive in feeling or intent. We do not consider negative feelings necessarily a negative outcome. We do not expect feelings to be experienced similarly across regions and cultures or even between two people working together in the same place or between human and other species. We do not dismiss structural inequalities or their impacts in the moment, being mindful of global histories of colonialism and local imbalances of power. Yet the aesthetic of attachment, as experienced as intimacy, promises to be a quality that emerges from mutual regard and is often shared and welcomed between parties, offering affective alternatives-in-the-making.

Affect, Stewart argues [53], is registered in its particularities, connecting people and creating common experiences that shape public feeling. We propose that certain attachments promote hopeful actions, solidarity and care as common experiences. They relate

to a sense that aspects of the world are worth working for. Bennett [7] suggests: ‘one must be enamored with existence [...] to be capable of donating some of one’s scarce mortal resources to the service of others’ (p4). These relations - of being enamoured, of donating to others - are both forms of closeness and what Bennett calls, elsewhere, vibrancy [8]. This affective charge can help in choosing where to place one’s efforts; it can lead to care, caring and further participation.

This brings to mind Durkheim’s ‘collective effervescence’ [21] and Collins’ ‘emotional energy’ [18]: positive feelings they see as motivating in choosing to repeatedly attend (religious) gatherings, form rituals and, ultimately, create institutions. While much PD is not ritual(lised), there is something in the connections made, attachments felt and sense of achievement that speaks to this mood. The idea of affective prefiguration carries suggestion that people who have experienced a strongly positive relation might want to build the conditions to repeat it. But we heed Wiese’s [59] critique of Collins and Durkheim for ‘implied utilitarianism in maximising “emotional profit” and “emotional entrainment”’ (p2). Wiese proposes a more mediated account: that affectivity is incorporated ‘into the dynamics of meaning-making and vice versa’ (p5). This places agency with participation, closer to what is proposed here.

5 Applications and Limitations

We have discussed participative intimacy as a coming-together to share an encounter to create that may hold, within it, seeds of transformation. We argue this is affective prefiguration, not just as an output of making, but as part of the process of becoming through collaboration. We offer this as resourcing: providing terminology and analysis to help designers/researchers articulate components of their practice. Each addition to our vocabularies helps construct our discipline(s) and we suggest that discussion and adoption of these new terms could help with the invisible aspects of making practice.

Willis suggests we make our designs, but they also make us [60]. Frauenberger and colleagues [26] ask how PD can create futures people might seek to live if given space to imagine them. Here we point to the potential to simultaneously make the futures we seek - that the two do not exist separately and that the act of seeking inclusive and caring futures is a prefigurative step towards worlds that better serve the needs of all living beings.

What we take from intimacy, which makes it particular to the work we describe, is the frisson in these encounters arising between participants. This frisson becomes visible in the practices of a group where intimacy unfolds through presence, gesture and shared creation. At *ArtsCentre*, young adults with lived experience of seeking asylum or migration meet weekly. Through applied theatre practice, attendees are invited to imagine and rehearse inclusive futures grounded in collective agency. With English language secondary, connection grows through shared rhythms: meals, check-ins, greetings and games. Over nine months, researchers witness a process of collaborative creation, as the group uses moodboards, alter-egos and storytelling to design and perform a fashion show. During one session, a participant uses his design - half-suit, half-dress - to speak about how clothing can mask the complexities of who we are. How easily people mistake appearance for truth, overlooking

the deeper experiences and emotions that lie beneath the surface. He alludes to assumptions made about him during his four-year migration across several countries. To emphasise his point, he pulls at the clothes he is wearing and then taps his head and chest. Others fall still, listening intently; those nearby offer quiet gestures of recognition - a nod, a murmur, a gentle touch. Through shared acts of identity-making, the group performs a collective politics of care. Participative intimacy here signals more than emotion; it is a sustained, relational practice of reconfiguring belonging.

In participative designerly tasks, relations produced go beyond cordial; they are changed together by a) coming together, and b) coming together to create, sometimes over months and years [40]: learning ‘about collaborators’ knowledges, intentions, and commitments, becoming part of an ecology of practices out of fragments ... itself transformative’ and finding ‘common pursuits and growing respect; to feel an affective bond even as we theorize differently about relations’ (ibid). People create ephemeral new structures, with no institutional bearings or preconceptions about how to make sense of the encounter, yet offering a precious inter-subjective quality, i.e. that lives between, like care, trust and power do. This can act as a platform for other, more articulated qualities, such as emotions and actions.

5.1 How to Spot Participative Intimacy?

‘How might one provide evidence of intimacy, especially when it is one of the least describable experiences in human life?’ ([51]:23). We offer analysis to draw attention to tacit qualities. It is not necessary to be aware of them to benefit from them. And we do not need to be purist about intimacy to work with it, yet it is worth considering characteristics.

We can point to a suite of relations, from empathy to care to belonging, in which intimacy can be generated and supported and to which it can, in turn, contribute. It is intersubjective affect at its simplest. While empathy may be one-sided and may overstate what is really understood between beings, intimacy flourishes in the ‘in-between’ and must be mutual. While care may be projected (care about) or given (care for), it has imbalances [56]. Intimacy, as an aspiration, is a ‘relationship of equals’ [29], in which something else can be born. This ‘aesthetic of attachment’ [9] distinguishes it from other feelings, making it special in prefigurative terms. As noted, it is a visceral sense of attachment before valence; sensory rather than emotional. It is a fabric upon which futures can be woven. Linked to the hope that manifests in collaboratively designing futures, it becomes a strong base for neighbourhoods and other communities of interest to build on.

5.2 Managing the Politics

Structural politics do not go away merely because a pair or group was able briefly to enjoy connection. However, being able to interact without oppression, as good facilitation can enable, allows difference to be appreciated, acknowledged and may be a basis for trust [37]. When using games as method, ‘power relations and other factors that might hamper idea generation are downplayed’ [13]. If playful processes of connection downplay factors that hamper ideas creation, what then is the place for conflict and other important agonistic processes in intimate situations? The prefigurative

politics of which we speak may be about making the change we want to see, but not everyone will agree on what should emerge.

Intimacy makes space for the negotiation of opinions and needs, for listening and demonstration of support lacking in many other (increasingly polarised) forums. It can be potent when reflexivity is sufficient to go beyond a feeling to acknowledgment of these changed relations and what they offer. Drawing attention to such moments and their capacitating can be another mark of good facilitation. Beyond the active hope this may enable [43], the sense of togetherness and belonging are features lacking from much thinking about futures, from scare stories of environmental calamity to the individualism promoted by neoliberal politics.

Yet, first, there is no guarantee that people will leave with a sense of togetherness. It can be designed for, but it cannot be designed in. The agency remains with all participants. If relations go beyond cordial - charged and changed by coming together to create - there is potential for a shared, even enhanced, sense of agency as an outcome, but this is not a given. Second, even when successful, this achievement is not without its concerns: it would not be healthy if a sense of intimacy permanently obscured present inequalities or built faith in authoritarianism. Participative intimacy, like the ‘effervescence’ of which Durkheim speaks [21], can build movements of all kinds. Participative intimacy as a form of affective prefiguration carries the suggestion that people who have experienced it might want to build the conditions to repeat it. We note the dangers of this, while reflecting on the barriers.

5.3 What can Designers Do?

So, last, we move from observing the workings of participatory intimacy to creating the conditions for it, in the context of:

- collectively anticipating and creating future affective states;
- describing/fostering experience of creative work on futures.

Participants engaged in working collaboratively towards better coexistence - as organisers or members of communities - can create the right conditions to support the growth of intimacy. Volpi and colleagues [57] advocate rekindling political roots by leveraging play to envision and test alternatives. Work on alternatives may involve play, but it is more than play: it is care, with organisers and participants building relations as part of intense, hidden labour. There is more than method that goes into making moments that can be safe, inspiring, collaborative and connecting. In summary, there are specifics we can attend to in aspiring to participative intimacies by:

- Prioritising process over output;
- Noticing conditions, not just outcomes;
- Scaffolding emotional safety;
- Recognising the designer as care worker;
- Supporting identity formation and agency, across generations and difference, opportunity and loss;
- Offering responsiveness, rather than seeking to control;
- Seeing design as political, not neutral
- Identifying and acknowledging changes in affective state.

Perhaps most importantly, if we want to use these moments in acts of care and community-building, the collective practicing of reflexivity cannot be overestimated: noting as researchers, creators

and participants when an intimate moment has meaning for us and noting the difference that makes for us and for others.

6 Conclusion

We have drawn on concepts of *affective prefiguration* and *participative intimacy* to explore the benefits of organising people to find new meaning and new relations. Co-designing futures, the loose descriptor we have used to assemble these collective design practices towards coexistence, does not have a tangible outcome. We might argue that, apart from the trajectory while the group works together, there is nothing to specify. *Making Futures* [22] describes ‘bottom-up formations of collaborative services and creative communities’ (p4) with ‘no single future arriving first and fastest, only multiple, heterogeneous, and controversial futures that are in the making, composed through the networking, the many entanglements’ (p10). There is also no straightforward travel guide.

Intimacy offers a new lens to understand this journey. Building participant agency through small personal interactions is necessary before demanding greater political participation, argue Gautam and Tatar [27], where a value of PD lies ‘in the process itself if it helps participants position themselves as actors in the larger world.’ We can identify the importance of the local and specific even in great existential and global matters. Intimacy, like care, cannot scale: it loses the significant connection brought by mutual recognition and subsequent affective change; it is always grounded in what is safe enough, attractive and meaningful in place. In situating ourselves in the smaller details of life together, with an agenda to build the collectives that can act locally and in concert with others, we address the question as to how PD might facilitate living together - in a recursive acknowledgment that by living closely and kindly and planning to build on that basis, we may be already making that change. We suggest this can prefigure the emotional texture of a collective life. This can happen in the everyday but may be worked for more deliberately [35]: aligning people in new relations to learn what is possible for them to become in the right conditions. If intimacy is a practice, it manifests in rhythms of connection and micro-political interventions that affirm belonging. Viewed this way, we are free of any instrumentalism, of participative intimacy as a tool, and can practice it as a form of love.

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Crafting Spaces of and for Care: Reflectivity as a Pathway to Coexistence in Participatory Design

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Abstract

This exploratory paper investigates the role of reflectivity in participatory design (PD), emphasizing its potential to recalibrate processes and address systemic inequities. Drawing on workshops conducted within the InclusiveCity project and the NORDES 2025 conference, the study examines how designers' positionality and power influence PD outcomes. It proposes reflectivity as a critical, embodied, and relational practice that fosters inclusive engagement, especially with marginalized groups. Through hands-on methods, storytelling, and reflective pauses, the paper offers a methodological repertoire to support designers in navigating complex dynamics and enhancing *care-full* facilitation. Ultimately, it calls for a shift in PD toward deeper self-awareness, ethical responsiveness, and pluralistic worldviews.

Keywords

reflectivity, feminist methodologies, responsive design, inclusive placemaking, power

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1 Reflexivity in Participatory Design: Reimagining the Designer's Role in Shaping Equitable Engagements

This exploratory article opens a critical inquiry within the field of participatory design, focusing on the role of reflexivity in crafting more equitable and inclusive participatory design processes. At NORDES 2025, several contributors (De Rosa et al. 2025; Ligi & Panepinto 2025; Light & Catlow 2025) emphasized the importance of pause and reflection. Beyond this event, broader scholarship (Schön 1983; Vink et al. 2022; Akama et al. 2020) further argues for the necessity of reflective practice. Some addressed the inherent complexity of such acts, given that designers - researchers and practitioners - are strained subjects who often occupy multiple and shifting positionalities when engaged in design projects (Honauer,

2025). This perspective challenges a historically entrenched view - embedded in institutional frameworks of participatory design (see Huybrectht, et al., 2017) - that portrays the designer as a neutral actor in the design situation, akin to a surgeon intervening in a sterile clinical environment (Suchman, 2002; Light & Akama, 2012; Place, 2023). Such traditions, along with the prevailing "toolkit culture" of participatory design, tend to simplify responses as ready-made antidotes (Patterson, Cheng & Chandra, 2023). Moreover, these approaches persist and may directly or indirectly reproduce systemic inequities and shortcomings by failing to sensitively adapt to contextual specificities (Kern, 2021; Toolis, 2017). Furthermore, such intentions may obscure the contested nature of public spaces and the intersecting tensions inherent in participatory encounters (Low & Smith, 2013).

In a context marked by polycrisis and amid the global rise of right-wing political agendas, it is imperative to critically revisit participatory design practices (Escobar et al., 2024). The upcoming PDC 2026 invites practitioners and researchers to engage in a critical dialogue about future PD trajectories: How can we nurture conviviality, dialogue, and peace within an increasingly fragmented global landscape marked by social and cultural disconnection? This inquiry aligns with PDC 2026's theme 'Living Together' by arguing that reflective practices are fundamental to cultivating coexistence - human and more-than-human - within participatory processes. Reflectivity becomes a condition for collective world-making, this includes re-examining the positionality of designers and reinterpreting their role within participatory processes (Honauer, 2025; Gottlieb, 2022; Lund, 2018). Such a re-evaluation demands that designers assume responsiveness for the processes they conceptualize and implement while engaging in deeper reflection across multiple layers of practice (Vink, 2022; Thorpe & Gamman, 2011). A holistic reflection on the discipline is needed - one that involves both participatory design researchers and practitioners committed to participatory engagements. This is especially significant when these encounters are tied to the reconfiguration of public space entanglements, intervening in relational dynamics that shape current realities of access and exclusion from public spaces and resources (Manzini & Thorpe, 2018). This paper addresses the following research question: What tools enable reflexivity within participatory design (PD) research and practice? What is the potential of these tools to recalibrate processes and mitigate asymmetries? While this paper critiques the instrumental logic of tool-dependence in participatory design, the reflective techniques proposed here are not 'tools' in the conventional sense. Rather than prescribing standardized procedures, they function as frames for attunement, inviting openness, presence, and critical awareness.



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The inquiry focuses on the complex and often underexamined role of designers as mediators within participatory design processes (Ansell & Gash, 2012). Designers occupy a constrained mediatory position: they hold decision-making authority over certain aspects of the process, while remaining subject to external limitations in others (Allen & Queen, 2018). These continuous micro-decisions that shape and structure participatory encounters carry significant power (Thorpe & Gamman, 2011). However, findings suggest that designers frequently lack awareness of this power and possess limited literacy in how to manage, enact, and redistribute it (Goodwill et al., 2021). Embedding moments of reflection within their practice - both individually and collectively - enables greater self-awareness, positional clarity, critical thinking, and process recalibration. These reflective pauses foster methodological adjustments and reconfigurations that can reorient participatory approaches toward the needs of less-advantaged citizens, re-centering social and cultural objectives within the design process.

The methodology used to address these questions is based on a series of workshops facilitated by the author, each examining the reflective practices of facilitators and researchers engaged in participatory design (PD) processes. Two of these workshops took place within the InclusiveCity Project and involved PD facilitators working with marginalized groups on public space initiatives. In this project, the author participated as a researcher, engaging in iterative conversations with the facilitators about their methodological choices and facilitation approaches. A third workshop, described in the methodology section, was conducted with participatory design researchers during the NORDES 2025 conference.

The paper's contribution is primarily methodological: it offers an imaginative repertoire of methods that support the integration of reflexivity into PD processes. It also presents key insights that emerged from the reflective exercises, highlighting how reflexive practices can prompt the rethinking and recalibration of approaches used to engage communities in participatory contexts. The paper begins with a concise theoretical framework introducing participatory design and situating reflexivity within its practice. It then outlines the methodology, detailing the workshops and methods employed. The final section provides an open-ended discussion that expands the broader discourse on reflexivity in PD, emphasizing the designer's role in shaping processes and the ways in which positionality and privilege can either strengthen or limit access and rights for marginalized groups.

2 participatory design and reflectivity

The task of participatory design calls for greater awareness of designers agency and responsibility in affecting the process (Thorpe & Gamman, 2011; Nielsen & Bjerck, 2022; Udoewa & Gress, 2023). Josina Vink problematized the lack of reflections on values and social structures underpinning the organizations, which barely are in dispute in participatory processes (Vink, et al., 2021). Furthermore, the conceptualized *socially responsible designer* is tasked with greater "presence in reality" in order to recognize existing social capabilities in communities and/or in institutions, to empower them through the design process (Cipolla & Bartholo, 2014). Scholars have emphasized reflectivity as a critical instance for navigating power dynamics and inequities that emerge throughout design

processes (Honauer, 2025; Allen & Queen, 2018), by developing a critical awareness of how prevailing design paradigms continue to reproduce colonial structures (Akama et al., 2019), and by recognizing how design in itself is a factor of modernity (Escobar, 2018, da Rosa, Hurtig & Finardi, 2025). The Reflective Practitioner book (Schön, 1983) elaborates on the tacit knowledge that professionals bring to their work, which is then articulated with methods and tools. Reflectivity is what enables designer's agency to meaningfully and more consciously navigate that process. Even more, in PD settings, where conflict and collaboration between different stakeholders are permanently negotiated (Light & Akama, 2012). Yet, the concept of reflective practice often lacks systematic guidance for conducting sustained, long-term reflection (Kraff, 2020; Dalsgaard & Halskov, 2012). The essential task of critically reflecting and engaging in border-thinking (Mareis, et al., 2022) can be daunting - not only due to practical constraints, such as the limited availability of methods, resources, and time tailored to this purpose (Kraff, 2020), but also because criticality, awareness and positioning often challenge the very frameworks through which participatory design is conceived (Kieboom & van der Bijl-Brouwer, 2025).

Furthermore, feminist scholars have shown the political implications of reflectivity (Tronto, 1993). It can serve as a mechanism for unveiling and interrogating the relational and political conditions established among participants throughout the design process (Light & Catlow, 2025). By creating intentional moments for awareness and reflection - punctuation and poise (Akama & Light, 2020), practitioners can begin to perceive the subtle dynamics of interaction, power and care that shape collaborative engagements. Light & Catlow call for embedding awareness in PD in order to move from conventional facilitation to a *carefull* facilitation (2025). A notion of care toward others - embedded within reflective practice - can foster affective bonds throughout relational processes - a moral disposition to notice and attune to oneself and others (Fisher & Tronto, 1990; Tronto, 1993, 2012; Davis, 2022). This attentiveness demands relational sensitivity (Gottlieb, 2023), including awareness of social contexts (Vink & Koskela-Huotari, 2022), recognition of plurality, and practices of attunement such as seeing, listening, time-giving, and patience (Sevenhuijsen, 2018). Haraway calls for a more reflective account of the world - one that enables us to live critically and ethically in relation to our own and others' practices of domination and the unequal distributions of privilege and oppression that shape all positions (Haraway, 1988). Feminist scholars further remind us that understanding oneself as part of a relational process entails an emotional and embodied commitment, challenging rationalist notions of modernity that elevate the autonomous, context-detached individual (Escobar et al., 2022; Holmes, 2010; De la Rosa et al., 2025). In this view, reflectivity is not merely cognitive or ethical - it is a deeply embodied and affective endeavor.

3 methodology

To explore the research question, three workshops considered case studies were conducted. Additional data were collected from observations, short interviews with experts and facilitators involved in



InclusiveCity project¹. The sessions mediated using tangible materials to explore reflectivity within PD and positioning of facilitators in the PD processes (Aguirre Ulloa and Paulsen, 2017; Lockton et al., 2019; Knutz and Markussen, 2022). During the workshops, discussions were recorded and pictures were taken with the participants' verbal consent. Although verbal consent included approval for photography, participants expressed a preference for maintaining anonymity in publications. In alignment with PD ethics of care and agency, we therefore chose to blur faces. Additionally, observations were made and short testimonies by participants were collected. Data produced during the workshop sessions were documented and analyzed using Miro tool to visualize them and organize them. In continuation the workshops are further detailed.

3.1 Workshop Reflective Pause: inclusion in PD

This workshop was hosted under InclusiveCity project, took place in Vienna in 2024 and was planned and facilitated by the author. The aim of this workshop was to discuss and reflect on complex issues related to power, agency, inclusion, and the role of designers in public space design projects.

The session brought together 16 practitioners engaged in participatory design processes from four European cities: Oslo, Budapest, Vienna, and Rotterdam. Working in mixed groups of four to five participants, each table focused on a specific topic, guided by a set of curated questions. These questions were developed through a literature review conducted during the initial phase of the InclusiveCity Project. They served as prompts for collective reflection on key challenges related to inclusivity in design practices. This gathering marked the first in-person meeting, held five months after the launch of the three-year European initiative, and functioned as a foundational reflective exercise within the early stages of participatory design.

One of the discussion tables focused on the role and positionality of designers within participatory design (PD) projects. Participants

¹The European project InclusiveCity funded by DUT Driving Urban Transitions Partnership, focuses on developing tools and methods that promote multigenerational and gender-sensitive use of urban spaces in 5 European cities: Vienna, Rome, Rotterdam, Oslo and Budapest. The project and the formation of the consortium led primarily by Universities and NGOs already active in the field of participatory design, were concerned with revising current participatory planning methods in public space projects in the quest of inclusion of marginalized community groups.



explored questions such as: What is the role of designers in addressing power asymmetries in PD? How do designers become aware of their own biases? How is positionality integrated into participatory practices? What creates opportunities for self-reflection in PD? How can design practitioners challenge colonial perspectives? Where does the process begin - and where does it end?

To support these reflections, participants collaboratively created shared boards using a variety of tactile materials - silks of different textures, woods of various sizes, threads, pins, and more. These materials were sourced from a social organization dedicated to collecting, recycling, and upcycling used items. The boards functioned as conversational objects (Lockton et al., 2019), enabling participants to express intangible dimensions of space-making through hands-on engagement and craftsmanship. The workshop also emphasized the importance of embedding reflexivity into the design process - not only as a means for facilitators to reflect on their own practices, but also as a strategy for generating insights and fostering dialogue across diverse cases. Participants discussed potential tools and approaches to support this integration, highlighting the need for reflective pauses within urban participatory design.

3.2 Workshop Urban Reflective Pauses

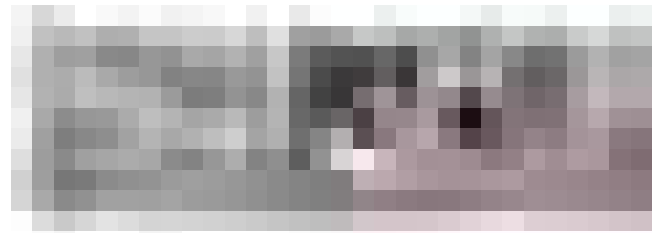
As part of the InclusiveCity project, and on the midway of the European project, the workshop “Urban Reflective Pauses: Centering Care and Inclusion in Placemaking” was designed to foreground reflexivity as a critical and embodied practice within participatory design. The session was structured to create a deliberate pause in the fast-paced environment of a placemaking conference, offering PD practitioners working with public space projects a space for introspection, dialogue, and shared learning. Drawing on experiences from InclusiveCity ULLs across Vienna, Oslo, Rotterdam, Budapest, and Rome, the workshop combined meditative reflection, storytelling, and hands-on group work to explore how care and inclusion are enacted - or overlooked - in public space projects and design practices.

The session began with a guided reflective pause, inviting participants to slow down, engage in silent contemplation, and consider their own roles, assumptions, and methods in relation to inclusion. This meditative segment was supported by soft music and open-ended questions, encouraging participants to reflect on who they design for, how they communicate, and what power dynamics are embedded in their facilitation practices. The story line was made jointly in a collaborative manner between PD practitioners of InclusiveCity project. Following this, participants shared their reflections in pairs, fostering intimacy and trust.

The second part of the workshop transitioned into a collaborative group activity. Each table was anchored by a specific ULL case and a physical object representing a local story or challenge. Participants engaged in conversations around guiding questions related to care, safety, engagement, and embodied facilitation. They co-created visual posters that mapped their insights, which were then exchanged among tables for peer feedback. This iterative process emphasized the relational and situated nature of reflective practice, allowing participants to learn from their situatedness and openness to connect relationally and pluriversality with other's experiences.

3.3 Workshop at NORDES with design researchers

As part of the NORDES 2025 conference, the workshop titled “An Exploration on Relationality and Decoloniality in Participatory Design Based on Care” was designed as a three-hour, practice-based session to explore how participatory design can be reimagined through the lenses of care, relationality, and decoloniality (da Rosa, Hurtig & Finardi, 2025). The workshop brought together 11 design researchers in a horizontal setting that encouraged dialogue, reflection, and material engagement. The methodology was grounded in embodied and situated practices, using materials such as clay and threads to facilitate non-verbal and reflective exploration of participants' positionalities and design research practices.



The approach called for creating spaces of reflexivity within the still-dominant frameworks of modern academic knowledge. Through the enactment of relational methods and care participants embraced a pluriverse mindset to think on alternative ways of sharing and producing knowledge. It began with an individual - silent - reflective activity where participants embodied thinking through hands - using clay - they modelled their current design practice. This was followed by small group discussions where participants critically and relationally reflected on their models, on tensions, discomforts, and power dynamics within their participatory research work. Using threads and nails, participants physically connected their figures, creating a collective model that visualized relationships, interdependencies, and the power embedded in their academic work. These models served as tools for deeper reflection and the discussions were escalated until finalizing in a common round. The final reflections were recorded with participant's consent.

4 Reflectivity: crafting spaces for reflection

Reflectivity is an enacted activity which allows practitioners to access states of greater awareness to issues of power and privilege (Goodwill, 2022). The defense of an ethics rooted in care manifests that decision-making are affected not only by moral and rational conventions of good and bad, but they are influenced by the positioning from which we construct them (Gilligan, 1993). Reflectivity allows for the acknowledgment of one's position in relation to others - humans and non-humans-, which can be recognized as an act of generosity and attunement to the environment (Vink & Koskela-Huotari, 2022). Even though it is recognized the relevance of reflectivity for designers (Ibid., 2022; Light & Catlow, 2025), there is a lack of discussion on the methods for enacting a reflectivity (Honauer, 2025) influenced by the void in design education on reflective practices. Furthermore, the frameworks through which PD is being designed and implemented - primarily concerned with

assessing efficiency (Kieboom & van der Bijl-Brouwer, 2025) rather than with the qualitative conditions of the relational process (Light & Akama et al., 2020) – retrench reflective agency and consequently designer’s reflective skills. This study has experimented with methods that can elevate the discussion and the imagination on possible approaches to reflectivity in practice, consolidating valuable insights for future practitioners revolving the appreciation of silence and presence in PD practice and processes, a critical stance grounding and the openness to a more explorative and variability in methods choices.

4.1 Creating space for less dominant narratives: valuing silence and presence

According to Gilligan (1983, p. 20), the foundation of any meaningful relationship lies in an initial act of self-connection. The ability to listen and relate to others is contingent upon the agency of having a voice – an expression of one’s presence and subjectivity. Within PD processes, certain voices tend to dominate, not necessarily because others lack something to contribute, but because the conditions of participation may not adequately support their emergence. This imbalance does not imply voicelessness, but rather a systemic failure to enable those voices to be heard. Urban reflective Pause Workshop prompted critical questions inviting PD practitioners to revisit their own practices and the power embedded in the small decisions they take throughout a PD process. This reflective pause was accompanied by a performative stage design, silence and meditative sounds. The script jointly designed between PD facilitators of InclusiveCity crystalized critical thoughts concerned with better addressing aspects of power imbalances and inclusion:

“First just think about the faces that you encounter in your participatory design practices. Who are they? Do you know their names, a story, or something personal about them? If you think about the preparation phase before encountering these people, who do you have in mind while you are still in the office? How do you decide about the simplest inclusion aspects – like where you communicate about an event and what sort of language register are you using? When is the event taking place, and what is the venue? Is it more up to you to decide this question, or is it something that you cannot influence?”
 “(InclusiveCity, 2025)

The workshop triggered reflections regarding the design of the ULL’s PD processes, and the choices facilitators made in Vienna and in Oslo. In the context of Oslo, participatory design (PD) efforts extended beyond human stakeholders to include non-human actors. Engaging relationally with natural elements – such as plants, trees, and herbs native to the Grønland area – required designers to navigate more-than-human’s intersections. They were challenged to create spaces where silent perspectives could be acknowledged and woven into the process. This involved a reflective stance to dismiss essentialized hierarchies and grasp an informed PD (Akama, et al., 2020) aware of the neighbourhood’s “agencies, dependencies, entanglements, and relations” (Forlano, 2017). At the micro-level, during PD workshops, this meant cultivating an attentiveness not only to spoken contributions but also to what remained unsaid.

One such session was conducted in collaboration with a botanical expert, who guided participants through an exploratory walk. The walking methodology facilitated encounters with diverse wild species scattered throughout the neighborhood’s streets – species generally suppressed and unheard by urban technicians and designers (Akama et al., 2020). This reflective facilitation and embodied engagement allowed reconsiderations in the design process accounting the relational and pluriverse mesh of the landscape and the silent – non-humans- agencies that inhabit it (Escobar, 2018).

Other reflections that prompted the workshop were concerned with variations through the PD process, showing how through reflectivity facilitators, learned and assimilated those learnings in future decisions. In Vienna, facilitators engaged with seniors (60+) in a design process aimed at democratizing public space around the Donaukanal. However, challenges through the PD process soon emerged – many elderly adults struggled to access the site, and unclear scheduling caused anxiety about physical demands. This prompted a redesign of PD methods: senior representatives were involved from the beginning and decisions on methods, schedules and activities were openly shared with the group in advance. As one facilitator noted, “We intentionally chose to step back... this initiative supports their vision, not ours.” The recognition of their own biases and limitations through a reflective practice, allowed facilitators to embrace vulnerability (Cipolla, 2018) and conversely to ideate more inclusive and responsive PD methodologies.



4.2 Materializing Reflectivity: using clay and/or hands-on methods

The experiments conducted to foster reflectivity underscored the value of techniques that engage the body as an integral part of methodological inquiry, intertwining physical experience with cognitive processes (Brandt, et al., 2012; Vines et al., 2013). Reflection, in this context, is understood as an inward journey that demands attentiveness and emotional engagement with the present condition (Escobar, 2018). In the third workshop the material’s plasticity enabled participants to “think with their hands,” offering an alternative, non-verbal cognitive language for expression (Groth, 2017).

The tactile interaction with the material – getting one’s hands dirty, engaging in play, embracing silence, and working through sensory and plastic dimensions – called participants into presence (Ibid., 2017). The physical act of shaping clay helped individuals articulate complex and sometimes contradictory feelings about their research. For example, one researcher created a piece that was partly smooth and partly rough and “messy,” symbolizing how

certain aspects of her research felt clear and under control, while others remained elusive. This led to an honest conversation reflecting on the points of agency where she has the power to intervene – such as the decision to seek references, bibliography, and design examples that challenge the normalizing gaze of design – and other institutional turning points where she finds herself subordinated to the power of others.

4.3 It is not only about methods: Reflection as a design practice

A constant reflection to issues of access and power throughout the entire timeline of the participatory process enhances the inclusiveness of the engagement strategy and helps to balance relationships critically prioritizing marginalized needs. Who is included and who is excluded in the design project? – Which stakeholders are represented in the design project? Which are not? – How are different stakeholders invited to participate? – Will each stakeholder enjoy the same kind of access throughout the design process, or will it change? – How much influence do you have in determining access? – What are the reasons for inclusion/exclusion? (Goodwill, et al., 2021, p55). This kind of reflective practice is not inherited through a specific method, but it is attached to an attitude practiced by the designer iteratively through the participatory design process (Kraff, 2020). It allows for more cautious and care-full (Light & Catlow, 2025) decisions being greatly aware of how power entangles.

5 Conclusions: Reflective Methodologies and the politics of PD

Embracing a reflective methodology requires the designers to critically interrogate their own commitment to engage in a dialogic attitude with another other. Thus, that critical attunement is a pathway toward realizing the democratic ideals of participation (Kraff, 2020, p. 37). A relational process that involves engaging in reflection through the perspectives of others, including project participants – humans and non-humans – facilitators and the institutional representatives holding PD practices. In this way, reflection becomes a means of scrutinizing one's cultural assumptions and participatory practices by consciously situating oneself as a researcher or facilitator within the very processes under examination (Suchman, 2002; Pihkala & Karasti, 2016). By foregrounding reflective engagement, designers are better equipped to attend to the nuances of participation, relational dynamics, and the ethical dimensions of participatory design. This attitude can have a cascade effect, by being transferred from designers to community members through relational practices spreading power awareness and agency.

Participatory designers and researchers operate within institutional entanglements defined by their own contextualized power dynamics (Huybrechts et al., 2017). These institutions may exert pressures and impose constraints, making it necessary for researchers to identify or create “spaces of care” or “refuges” to safeguard their work and uphold their principles. Workshop 3, design researchers shared the tensions and conflicts they encounter in their everyday practice when attempting to enact a reflective methodology and causally affect design research processes. Building meaningful relationships with communities, embracing situated and relational methods, and engaging with participatory action research (PAR)

require time and a deep commitment to lived realities. However, dominant academic paradigms in design are structured by logics of modernity and discourses of innovation that prioritize quantitative metrics – such as academic publication output (Millar et al., 2025) – which paradoxically clash with the intentions of situated, relational, and reflective methodologies. The rearticulation of interdependency and pluriversal temporalities invites a broader conversation on relationality and pluriversality in co-design, one that should culminate in collective action and mutual commitment (Escobar, 2018; da Rosa, Hurtig & Finardi, 2025).

Furthermore, the workshops organized in the context of Inclusive City, where externally founded by a European organization, seeking for transitional methodologies and participatory engagements. These allowed practitioners – often constrained by their organizational cultures – to spend time and resources critically and two explore with methods, while engaging more attentively on a reflective iterative practice. The conclusions are yet not transferable to other contexts, for example to public organizations where daily pressure for instant and visible results, scarcity in resources or requirements allocated to PD projects could distort the disposition on PD practitioners. Similarly in the case of the workshop conducted with PD researchers, the setting of a conference allowed for the discussion, being more difficult to adopt and embed critical discussions on power and agency within institutional frames. Finally, all the samples were contextualized and produced in northern European contexts, difficult to interpret if findings will also be dialogic to southern context, where the possibility of “stopping” for reflecting might be perceived as an exclusive and privileged capacity, detached from urgent realities. Future research should explore how reflective practices can be adapted to resource-constrained public organizations, tested in non-European or majority-world contexts, and evaluated longitudinally to understand how reflection reshapes facilitation over time.

This exploratory article contributes to the theme of PDC 2026 Living Together by proposing a methodological imaginary of tools designed to foster reflectivity within participatory design practice and research. These methods advocate for reimagining design through the lenses of care (de la Bellacasa, 2017; Baart et al., 2020) and feminism (Haraway, 1988; Harding, 2019; Hooks, 2015), as a way to confront the epistemic and ontological injustices embedded in design. A pluralistic worldview of design – one that enables the coexistence of diverse worlds and ways of doing (Escobar et al., 2022) – can only emerge if designers create intentional pauses to deconstruct their own biases and reinterpret design processes. These reflective moments sharpen designers' sensitivity in both observation and listening, particularly in relation to marginalized groups, thereby influencing decision-making (Kraff, 2020). Ongoing reflection on the dynamics of power and hierarchies that emerge throughout the design process can support designers in positioning themselves and making decisions aligned with the inclusive goals of their projects. This calls for conflicts and tensions within PD research and practice to be expressed, acknowledged, experienced and lived in many ways of knowing and feeling. A challenge in PD is to move from ontological foundations looking for solutions and reimagine PD design methods and facilitation to embrace conflict and dissensus – the overlapping dynamic relational weaving of multiple constellations of worldviews, identities, ideas,

and positionalities (Dijkema, 2022). Reflectivity constitutes a critical framework through which conventional participatory design (PD) practices can evolve toward careful facilitation (Hee-jeong Choi et al., 2023; Light & Catlow, 2025). By committing to openly reflect on how and what power is distributed within projects are a way to challenge the world to be better – to challenge privileges, injustice and systemic failures. This paper calls upon the design community to heighten awareness of our positionality, the power we hold, the power generated through relational processes, on how is being - unevenly - distributed. This awareness must be mobilized in support of those who urgently need a place in the conversation - namely, marginalized groups.

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Participatory Urban Conflict Mapping

Designing Infrastructures for urban peacebuilding through situated agonistic and relational practices

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Abstract

This paper explores the potential of participatory urban conflict mapping as an enquiry and advocacy tool to foster peace ecologies. Drawing on the intersection of peace economics, agonistic democracy, and infrastructuring, this work examines how mapping can serve not as a neutral representation tool but as a civic infrastructure for surfacing systemic conflicts, facilitating dialogue, and envisioning transformative futures. Grounded in the notion of design for peace ecosystems, the study situates conflicts as a structural and generative dimension of urban life, particularly in contexts marked by layered inequalities, fragmented governance, and civic mobilizations. Through a multi-scalar, trans-local approach involving pilot activities in Milan, Rio de Janeiro, and Bogotá, the paper proposes a participatory mapping protocol that supports inclusive knowledge co-production and reflexive inquiry. The process emphasized multi-disciplinary inquiry, collaborative sense-making, and situated data practices as critical design tools. By integrating qualitative data collection, participatory inquiry, and visual synthesis, the initiative proposes a methodological framework for conflict mapping that is both epistemic and transformative. The paper reflects on the implications of this approach for participatory design research, particularly in addressing structural injustices/conflicts, and advancing socially just urban transformations. The proposed experimental action is structured as a replicable and adaptable platform to support design-led peacebuilding efforts in urban environments, aiming to create an open platform for self-mapping urban conflicts accessible to all citizens.

CCS Concepts

• **Human-centered computing** → Human computer interaction (HCI); Collaborative content creation; • **Social and professional topics** → Cultural characteristics.

Keywords

Participatory Design, Urban Conflict Mapping, Infrastructuring, Agonistic Design

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1 Introduction

In a global context characterized by polycrisis [20]: political instability, social inequalities, migratory pressures and interconnected environmental crises, new theoretical and practical urgencies emerge around the construction of sustainable forms of peace [7]. What could be the contribution of the design discipline in response to these challenges? Is it possible to *Design for Peace*? And if it is, through what kind of processes, tools and actors?

Debates in peace studies distinguish between “negative peace,” understood as the absence of violence [12], and “positive peace,” which implies the presence of social and equal conditions. Alongside this perspective, growing attention is being paid to the ecological and territorial dimensions of peace, recognizing that urban and environmental conflicts are deeply rooted in systemic inequalities and practices of exclusion. This project begins with the premise that a core problem is the superficial or invisible nature of these conflicts, which are often reduced to apparent disagreements between parties, thereby obscuring the underlying structural relationships and causes. Designing ecosystems of peace processes addresses this by making latent tensions visible as entry points for systemic analysis and transformation. It can involve developing actions that foster social cohesion, strengthen local institutions, and mitigate tensions through transformative and context-specific approaches.

Within this framework, design could operate as an infrastructure for participation and social innovation, enabling collaborative processes, innovative tools of data collection and analysis, knowledge and artefacts production that support new configurations of urban justice.

The *Design for Peace Ecosystems* (D4PE) project, initiated as an international research and educational network, specifically explores this field through experimental research and teaching practices in different cities. Its goal is to investigate how design can act as a catalyst for peace by surfacing social conflicts embedded in the urban fabric and the structural and systemic injustices that generate and sustain them, while enabling spaces for dialogue and co-producing imaginaries of justice through the tools and practices of design.

The D4PE initiative operates within a four-year Erasmus+ K171 Mobility Project. During the first year, the participating Universities developed parallel initiatives in three cities, aiming to understand how design education could contribute to the construction of peace ecosystems. The results were projects with a site-specific social

impact: in Bogotá, the Viendo-T programme supports the social and labour inclusion of Venezuelan migrants; in Rio de Janeiro, the SYNAPSES project has co-created public spaces for peace involving children and local communities; in Milan, a conflict map has been developed to highlight latent tensions related to mobility and housing. Despite differences, these experiences share a common orientation: conceiving urban conflict as a generative space that enables transformative practices. The stark contrasts between the cities involved reveal the deeply contextual nature of the challenge: a systemic and situated analysis is therefore essential to understand how each city generates distinct relational conflicts and to develop context-specific conceptions of peace.

Urban Conflict Mapping has emerged as a promising experimental practice: combining systemic analysis, situated knowledge, and open-source tools. Accordingly, the network dedicated its second year to developing and testing a participatory protocol for mapping urban conflicts in 2025. Rather than a neutral representational exercise, Participatory Urban Conflict Mapping (PUCM) is conceived as an early form of civic infrastructure that supports knowledge co-production and collective imagination while making hidden inequalities visible. This paper presents a first iteration of a participatory protocol for mapping urban conflicts, developed and tested through workshops in Milan, Rio de Janeiro, and Bogotá. By integrating participatory design, critical cartography, and systemic analysis, the study explores the potential of mapping as a design practice for understanding and engaging with conflicts at the city level.

The paper is structured into four sections: (1) the definition of the theoretical framework, linking the concept of peace to conflict transformation and urban justice; (2) the description of the methodology used to prototype the mapping protocol; (3) the presentation of preliminary results from pilots; (4) a discussion of the open challenges, including data governance, institutional roles, and civic participation. In conclusion, PUCM reflects the potential as an exploratory tool for building urban peace ecosystems that can enable practices of everyday peace.

2 Theoretical Background

This contribution advances a theoretical framework that critically connects peacebuilding, conflict analysis, and participatory design (PD). Rather than presenting PUCM as a comprehensive solution, the paper examines its potential as a situated research approach and civic-oriented practice for articulating and collectively reflecting on systemic tensions. In doing so, it discusses both the capacities and the constraints of such mapping practices in supporting processes of awareness, dialogue, and incremental social change.

2.1 Peace Ecosystems: Rethinking Peace as Systemic Transformation

In an era characterised by intertwined crises [20], peace can no longer be defined as the mere absence of violence. Drawing on Galtung's distinction between negative and positive peace [12], it is instead understood as a generative, situated, and ongoing process grounded in justice and equity. Lederach [21] expands this perspective by shifting attention away from linear and conclusive agreements toward *transformative platforms*: relational and

adaptive spaces in which divided groups can build regenerative relationships over time. Understanding peace as relational and justice-oriented [21], and as embedded in everyday and vulnerable practices [28, 33], highlights that peacebuilding involves building just relationships, sustaining social reproduction, and developing collective capacities to care, addressing interdependence and vulnerability [32].

Within this framework, design is repositioned as a relational and transformative practice that operates as an infrastructure, supports processes of conflict mediation and knowledge co-production, while enabling the collective imagination of plural and contested futures [9, 11, 22]. Designers can shape the conditions under which dissent can be articulated.

2.2 Urban Conflicts: Definitions and Design Implications

Urban Conflict (UC) can be defined as *the active friction that arises when competing needs, values, and powers clash within the city* [4, 5]. Cities function as central arenas where diverse actors negotiate for resources, rights, and recognition. This negotiation and the conflict it generates are a structural feature of urban life, one that both reflects and perpetuates systemic inequalities in areas such as housing, mobility, cultural recognition, environmental and food justice [16, 30].

Conflicts related to urban food systems encompassing issues of access, sovereignty and distribution, and serve as a preliminary example. They illustrate how urban tensions are deeply embedded in broader political-economic structures and struggles over essential resources. Such systemic tensions manifest in diverse forms, ranging from everyday, low-intensity disputes to large-scale public mobilizations [25, 30].

In urban studies, many authors deal with conflict and justice: Fainstein [10] proposes the model of the *Just City*, based on equity, diversity and democracy, emphasizing equity as a corrective to structural inequalities. Harvey [15] interprets urban space as a field of struggle between capital and labour, invoking the *right to the city* as a lever for systemic transformation. Both converge in recognizing conflict as a central political and epistemic resource concerning justice.

2.3 Design and Conflict: Toward Agonistic and Transformative Practices

The theories of urban justice and conflict directly implicate the ethics and agency of design. Considering the transformative value of conflict in the urban context leads to a reconceptualization of the designer's role: from a problem solver to facilitator of conflict recognition and negotiation. Designers can shape the conditions under which dissent can be articulated and become a resource for change. This aligns with Mouffe's [26] theory of agonistic democracy, which underscores the need to institutionalize dissent to transform antagonism between enemies into agonism between legitimate adversaries. This vision has directly inspired approaches such as agonistic design [2, 19] and adversarial design [8], which seek not to erase conflict but to make it visible and to create public spaces where divergent perspectives can be confronted. Design, in this sense,

does not aim to build consensus but to create plural spaces of negotiation. Through processes of infrastructuring [17, 31], design sets up the material, relational, and symbolic conditions for the coexistence of irreducible differences. From this perspective, tools such as participatory mapping thus become relevant as agonistic devices for exposing structural injustices and enabling collective sense-making within conflictual urban contexts.

2.4 Participatory Mapping: Plural Epistemologies and the Visualization of Conflict

Participatory mapping (PM) is not a neutral technique of representation but a critical and collective act that makes visible the power relations and resistances embedded in urban territories [23, 34]. According to Cochrane and Corbett [3], it is a process in which community members contribute to the construction of maps through experiences, relationships, and situated knowledge, thereby challenging the technocratic paradigms of expert cartographies.

In recent years, PM has consolidated itself at the crossroads of critical cartography, participatory GIS, digital ethnography, and community development practices [6, 24]. Projects such as Map Kibera [14], Ramani Huria [13], and Missing Maps [1] demonstrate how collaborative mapping can make spatial inequalities visible and support humanitarian interventions. In the urban realm, initiatives such as Möves in Milan [27] and femMAP [18] illustrate how interactive maps can foster alternative imaginaries and practices of spatial justice.

However, the PM also raises sensitive issues: which data matters, who produces it, and which perspectives are made visible? In PM, participation is often limited to data collection or validation within predefined categories, leaving underlying epistemological assumptions unchallenged. Urban data, such as open municipal datasets related to housing, food security, or environmental conditions, are frequently fragmented, unevenly distributed, or shaped by extractive and managerial logics. In response, the mapping process discussed in this contribution tries to embrace plurality by treating mapping as an open-ended process. Rather than privileging a single data regime, it adopts a plural epistemology [24] that combines quantitative indicators with situated forms of knowledge, giving space to different voices through participatory approaches and, in the future, releasing the platform as open-infrastructure. Plurality is supported through the juxtaposition of heterogeneous data layers and the use of mapping workshops as dialogic spaces where participants can question categories and reflect on power relations embedded in both data analysis and visualization. Visualization also becomes a collective process of sense-making and an explicitly agonistic space [8, 26] in which competing interpretations of UCs can be articulated.

2.5 Toward a Design Ecosystem for Peace

At the intersection of peacebuilding, PD, and mapping lies the challenge of designing processes capable of revealing conflicts, enabling dialogue, and generating transformations without reproducing marginalizations. The focus, therefore, shifts from the production of finished artefacts to the creation of iterative platforms for negotiation, learning, and reflexive engagement.

Within this framework, PUCM operates as a methodological bridge between critical analysis and situated design practice. Rather than claiming to resolve conflicts or produce social transformation on its own, it supports processes of knowledge production, contributing incrementally to more just urban systems.

3 METHODOLOGY

This section presents the methodological framework and operational protocol for PUCM. The initiative was fundamentally a research-driven process, conceived and developed within academic design research and educational contexts. Its core aspiration, however, was to achieve civic relevance by engaging with conflicts of public concern and by prototyping tools with the potential for adoption by actors beyond academia. The protocol was tested through three sequential pilot workshops in Milan, Rio de Janeiro, and Bogotá in 2025.

3.1 Methodological Framework

The approach integrates PD [2, 8], action research [29], and care ethics [28, 32]. From this perspective, design is conceived as a situated, reflexive, and critical practice capable of: i) facilitating processes of knowledge co-production; ii) surfacing and making visible UCs; iii) enabling democratic and agonistic arenas of confrontation and building civic infrastructures for recognition (awareness).

Potential participants in this type of activity (citizens, activists, volunteers, policymakers) are not considered informants but co-researchers, contributing with situated knowledge and direct experiences.

3.1.1 Operational definition of urban conflict. For protocol development, UC was defined as “an active disagreement between actors, needs, or values that manifests in urban space and produces friction in relation to resources, rights, or recognition.”

This definition provides the basis for an initial taxonomy, developed by the researcher, to facilitate the classification of UCs within the participatory mapping activity.

The taxonomy, literature-based, includes multiple scales of conflict: from the micro level (neighborhood, community) to the meso level (city) and macro level (metropolis, urban networks). It also distinguishes between UC typologies (Political, Social, Economic, Environmental, and Technological) and sub-typologies, including governance, power, ideology, resources, wealth distribution, age, religion, gender, cultural identity, climate change, and land. The current protocol does not classify conflict intensity and explicitly excludes armed conflicts. This framework treats conflicts as singular socio-technical configurations to generate contextual knowledge.

3.2 Participatory Urban Conflict Mapping Protocol

The primary goal of the PUCM protocol is to: 1) make UCs visible as relational and systemic phenomena; 2) support collective sense-making around contested issues; and 3) experiment with mapping as a civic-oriented design infrastructure for dialogue and learning. It is an exploratory tool, testing how participatory mapping can bridge research, education, and public engagement. The PUCM protocol



Figure 1: Participatory Urban Conflict Mapping Protocol



Figure 2: Conflict description and visualization example

was designed as an iterative and adaptable process, articulated into four main steps (see 1).

The PUCM protocol was implemented in the pilot cities, each activity consisted of a time-bounded workshop format lasting approximately 16 hours, embedded within the University's partners. While the pilots shared a common structure and tools, they were

conducted independently and sequentially, allowing for iterative refinement across contexts.

3.2.1 Future Development. The ultimate objective of the protocol is to evolve into an open and autonomous civic infrastructure. Its vision is to become an accessible platform that any community, collective, or institution can adopt, adjust, and operate according

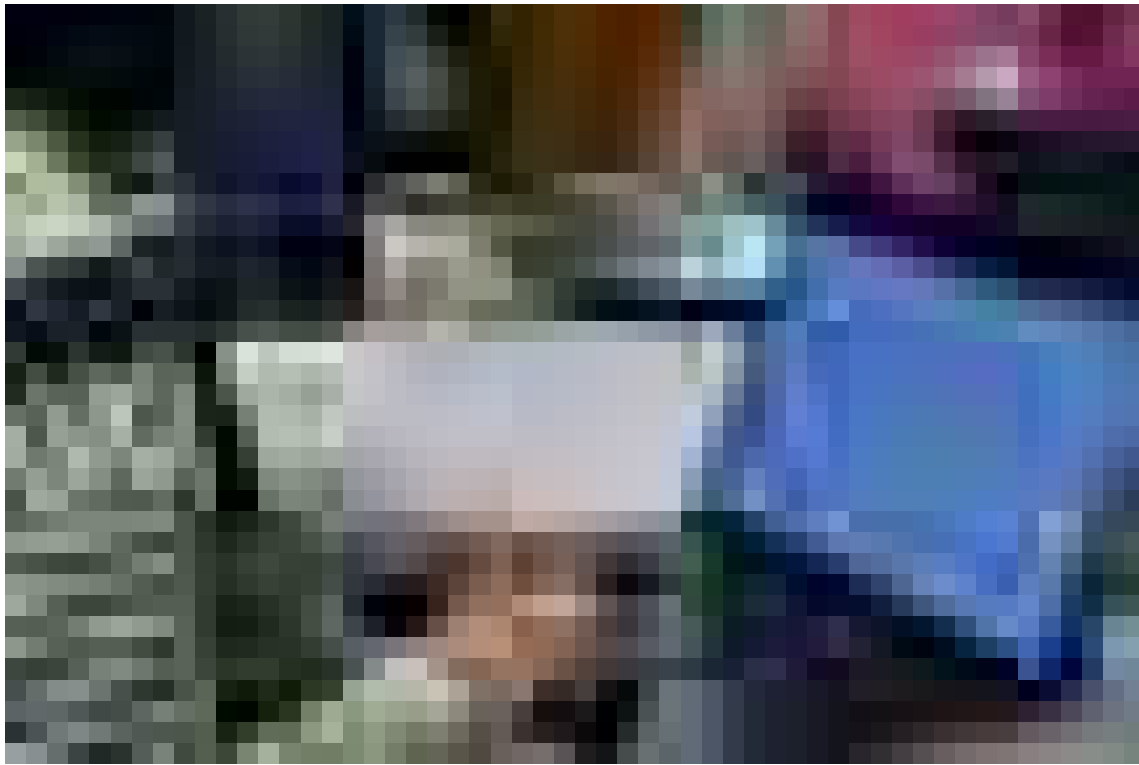


Figure 3: Milan PUCM workshop

to its own specific needs and contexts. This deliberate design for local self-management would enable continuous, collective cartography capable of making visible both traditionally marginalized or disregarded conflicts and the complex relationships between actors and territorial factors. By visualizing these intertwined dynamics, the tool seeks to facilitate a systemic understanding of conflicts, integrating diverse data and knowledge to catalyze informed community learning and action.

3.3 Pilots Context and Food Systems

The pilots were designed to test the protocol in diverse urban environments: Milan, Rio de Janeiro, and Bogotá, selected not only for their accessibility through partner institutions but also for their different urban ecosystems in terms of scale, culture and policies. Each pilot involved small interdisciplinary teams composed primarily of students and academic researchers, with the participation of selected interest groups where possible. At this stage, participation by citizens and grassroots organizations was limited, and the protocol does not claim to represent a fully community-led mapping process. Rather, participants were invited to act as co-researchers, contributing situated knowledge and interpretive perspectives, rather than as informants or data providers.

The choice to focus on Food Systems (FS) as a common entry point across the pilots reflects the sector's strategic role in revealing cross-cutting urban tensions. FS intersect with multiple dimensions, governance, inequality, cultural identity, and environmental sustainability and provide a concrete lens through which to surface

multi-scalar conflicts, thereby offering fertile ground for testing PUCM.

4 PILOTS: MILAN, RIO DE JANEIRO, AND BOGOTÁ

The pilot workshops engaged a core group of students, academics, and researchers; the participation of grassroots community actors was minimal and mediated through the academic partners. The process moved from workshops to map creation through a structured, collaborative workflow: after initial research question formulation, participants collected data, which was then categorized, georeferenced, and collectively visualized.

4.1 The Series of workshops

The workshops of 2025 involved 61 participants, including students, researchers, and professionals from different fields (5). Following the Milan test, considering the limitations of participation by a homogeneous group of students and the potential of situated mapping, the research group decided to extend participation to students from other disciplines, researchers and professionals outside the academy.

The structure combined theoretical inputs with hands-on group work, following a shared sequence of phases that were flexibly adapted to the specific characteristics of each context: Research question definition; Data collection, classification and visualization; Final restitution and collective discussion. The researchers' role

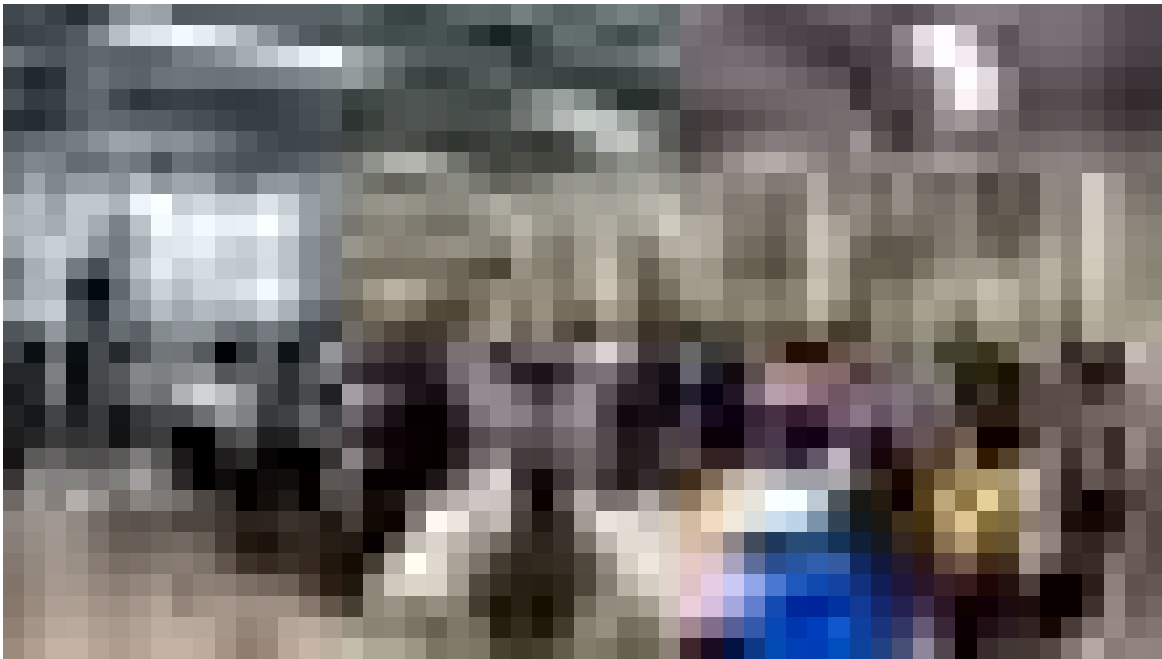


Figure 4: Rio de Janeiro PUCM Workshop



Figure 5: Timing and participants of the pilot workshops

was primarily that of facilitators and infrastructurers, ensuring a reflective and situated approach aligned with PD principles.

4.2 Preliminary result

The application of the protocol across three cities produced distinct yet comparable findings, confirming the potential of PM as both an analytical tool and a civic *engagement device*.

4.2.1 Milan. The mapping exercise led to the identification of 25 conflicts related to the urban FS. Key issues included the unequal distribution of food infrastructures between central and gentrified areas and peripheries; the precarious conditions of workers in the food and logistics sectors, especially food-platforms workers; the marginalization of minority food practices; and tensions between

corporate suppliers and community-based initiatives. The map made systemic patterns visible, such as the central role of the Municipality, the impact of territorial subdivisions (districts and Local Identity Units), and intersections with other urban systems such as housing.

4.2.2 Rio de Janeiro. Conflicts primarily revolved around the nexus between the *right to the city* and FS. Indigenous, quilombo, and favela communities highlighted struggles linked to land access, food security, and cultural sovereignty. Other mapped cases included artisanal fishing in contaminated areas, the expansion of dark kitchens associated with food delivery platforms, and tensions in the historic district of Pequena África, marked by the clash between cultural resistance and tourist-led valorization. The mapping

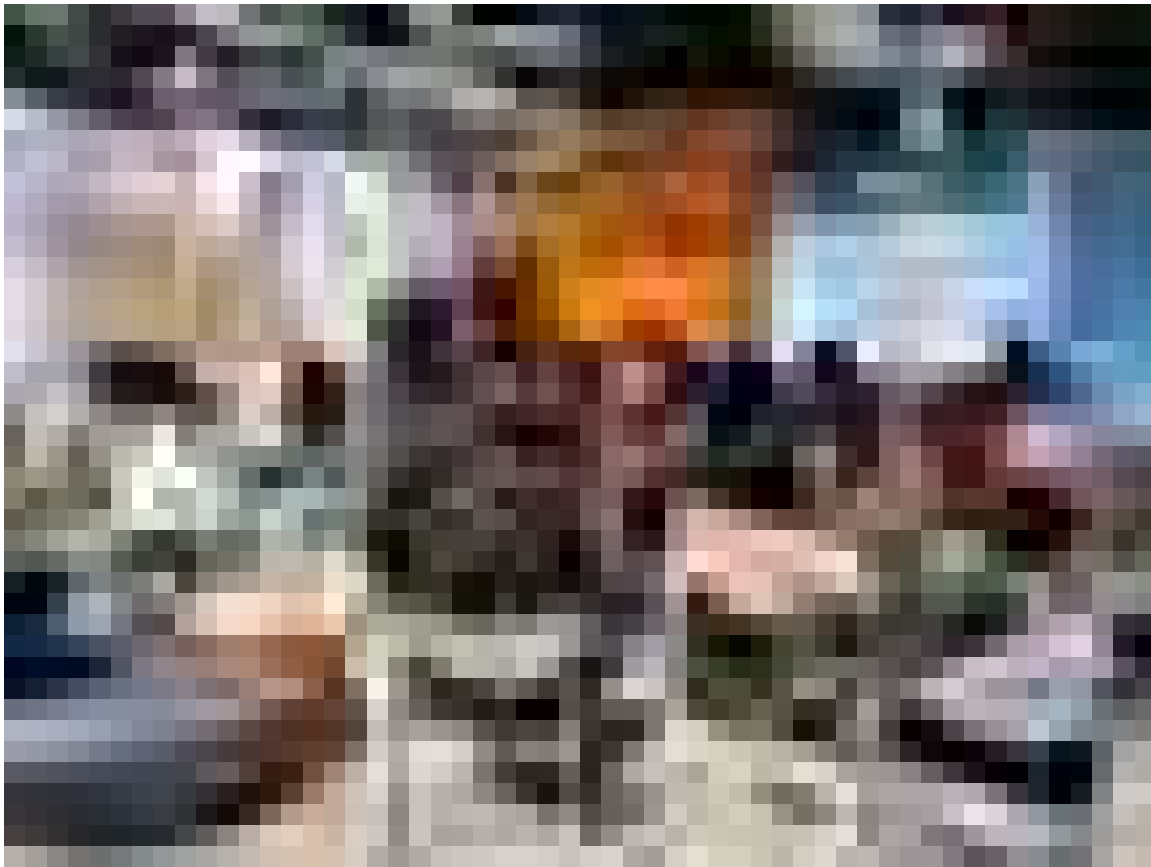


Figure 6: Bogotá PUCM workshop

highlighted the plurality of actors involved and the entanglement between informal economies and institutional governance.

4.2.3 Bogotá. The mapping exercise uncovered a complex landscape of conflicts rooted in informal labour and struggles for social recognition within the city's FS. Key findings highlighted the friction between street vendors and public transport regulations, the profound precarity of informal workers, the contentious socio-political dynamics of urban gardens, and the symbolic overvalorization of meat as a marker of social status. Collectively, these conflicts do more than highlight isolated issues; they expose how deeply socioeconomic inequalities and institutional fragilities are woven into the fabric of urban life, actively shaping not only food practices but also the cultural narratives that legitimize or challenge them.

4.3 Emerging Pattern, specificities and interconnections

Across the pilot workshops, food-related conflicts emerged as critical entry points for understanding broader urban tensions. Despite their differences, the three cases revealed comparable conflict subtypes:

- *Land and resource conflicts:* Characterized by unequal access to food infrastructures and urban food environments

that limit access to fresh and healthy food for all, often in disadvantaged peripheral or segregated areas;

- *Social and labour conflicts:* Including local food vendors affected by gentrification projects, and the invisibility of informal labour;
- *Economic and wealth distribution conflicts:* Highlighting tensions between large corporate food providers and small-scale or community-led initiatives;
- *Cultural identity and religious conflicts:* Involving the marginalization of minority food practices and food identities.

The findings reveal that urban food-related conflicts share structural and systemic traits. Informal economies play a central yet invisible role, often absent from official data. Labour within urban FS remains precarious and hidden, a condition further intensified by food delivery platforms. Local policies emerge as ambivalent actors, simultaneously generating tensions and offering opportunities for mitigation. Finally, cultural conflicts surrounding food practices and identities are frequently overlooked by institutional frameworks yet remain crucial for advancing food justice.

The resulting maps should not be viewed as neutral or descriptive outputs, but rather as evolving palimpsests that interconnect actors, infrastructures, policies, and narratives. PM emerges as a



Figure 7: Final map of Milan Urban Conflicts workshop



Figure 8: Final map of Rio de Janeiro Urban Conflicts Workshop

generative device, making latent conflicts visible, fostering critical reflection, and opening up possibilities for collectively imagining more equitable and sustainable urban futures.

All the cities shared common challenges: fragmented and uneven data availability, difficulties in engaging underrepresented

groups and uncertainty about how mapping can translate into tangible policy or social change. These findings underscore the need for iterative and reflexive mapping practices that support civic infrastructures for urban peacebuilding.



Figure 9: Final map of Bogotá Urban Conflicts workshop



Figure 10: Detail of Rio de Janeiro Map (presence of dark kitchen)

PUCM emerged as a pivotal methodology, effectively rendering visible the complex interconnections between diverse actors, physical infrastructures, and competing narratives. In Milan, the map clearly demonstrated how ongoing food conflicts directly overlapped with gentrifying neighborhoods. In Rio de Janeiro, the process pinpointed a significant concentration of cultural identity conflicts in specific urban zones. In Bogotá, the mapping revealed distinct clusters of conflict centered around transport hubs, street vendor agglomerations, and traditional markets, demonstrating the

critical nexus between urban mobility, precarious labour, and the consequential impact on food access and population well-being. Across all cities, mapping proved to be a dynamic infrastructure that prompted critical reflection.

5 Conclusions

This study establishes Participatory Urban Conflict Mapping (PUCM) as a dual-purpose framework for academic research and

civic engagement. Experimenting in Milan, Rio de Janeiro, and Bogotá, the protocol explored how food-related conflicts intersect with spatial inequality, informal economies, cultural identity, and governance structures. The methodology synthesized qualitative and quantitative data, making visible urban tensions that are often absent from institutional datasets (e.g. data related to informality work) and facilitated collective sense-making. While conflicts are locally distinct, they consistently reveal systemic drivers of precarity, exclusion, and struggles for recognition. These first findings suggest that the protocol can function as a comparative analytical lens, capable of identifying systemic tensions without erasing local specificity.

From a PD perspective, the study contributes methodologically by framing PUCM as situated and agonistic inquiry. Participation is not reduced to consensus-building; instead, the protocol treats conflict as a generative condition. Mapping is repositioned as a processual infrastructure supporting divergent worldviews, negotiation of meanings, and co-production of knowledge. Across cities, food-related conflicts served as entry points to broader urban dynamics, highlighting how infrastructures, informal practices, and institutions shape everyday experiences.

The pilot studies were constrained in terms of time and limitations in the involvement of participants' representative groups, so they were able to express potential for dialogue and awareness-raising rather than enabling sustained civic action.

The protocol also has some limitations that need to be explored further, including fragmentary data collection, the risk of political instrumentalization of the maps, high level of technical and organizational maintenance. Furthermore, although the ethics of care guide the protocol towards reflexivity and attention, its full implementation requires further experimentation. Scaling the approach raises additional challenges around governance, long-term stewardship, and the preservation of its critical and pluralistic orientation. Institutional adoption will require careful negotiation to balance legitimacy, resources, and continuity while maintaining openness and responsiveness to community interests. Future development will focus on expanding participatory governance and exploring partnerships with civic organizations.

In conclusion, PUCM is a promising yet provisional contribution to PC and urban peacebuilding: it does not resolve conflicts, but creates conditions in which they can be made visible, debated, and collectively reimaged toward more just and caring urban futures.

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Conflict Transformation by Design: Assembling Spaces for Listening Through Inquiry Process

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Abstract

This paper introduces *Facilitative Listening Design (FLD)*, a participatory and action-oriented methodology developed in Southeast Asia that operates simultaneously as inquiry and intervention. Rooted in traditions of positive peace, conflict transformation, and transformative research, FLD treats listening not as a passive act but as a deliberate design practice. The method structures inquiry across nine interconnected stages. Through this curated research process, community members shift into researcher positionalities, cross conflict lines, and generate new relational possibilities. Unlike peacebuilding approaches that seek premature conflict resolution, FLD designs spaces encounter that hold tension, sustain ambiguity, and nurture coexistence step-by-step so that relational progress is adaptable and genuine, continually guided by group level inquiry and knowledge production. By positioning inquiry itself as a site of transformation, FLD contributes to participatory design's capacity to foster peace as process. The paper reflects on FLD through participatory design research and practice, highlighting its potential to cultivate spaces of dialogue for community-level peacebuilding.

CCS Concepts

• Human-centered computing; • Interaction design; Interaction design process and methods; Participatory design;

Keywords

conflict transformation, peacebuilding, participatory and action-oriented research, collaborative inquiry, Facilitative Listening Design

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1 INTRODUCTION

Like participatory design (PD), peacebuilding as a field of practice has often been associated with impact and problem-solving through resolution. Emerging historically as an extension of peacekeeping and peacemaking, peacebuilding transcends the immediate and reactive orientation of peacekeeping and the ad hoc, frequently provisional character of peacemaking. Rather, it privileges engagement with the structural dimensions of conflict, orienting itself towards the more ambitious objectives of addressing root causes and fostering systemic alternatives to war, whether already emergent or possessing latent potential for development. Within this evolution, the concept of conflict transformation has provided a critical lens: one that reframes both the understanding of conflict and the responses to it. Rather than treating conflict as a problem to be solved or resolved, conflict transformation conceives of it as a dynamic process of change, emphasising shifts in relationships, attitudes, and structures over time [1, 2].

This perspective aligns closely with the ethos of PD, which has often been associated with collaborative problem-solving. As Arnstein [3] expounded in 1969, participation is the cornerstone of democracy as those excluded from political and economic processes are deliberately included by design. In the same vein, PD is concerned with designing the conditions for inclusion, dialogue, and shared meaning-making, particularly in response to calls for those affected by design to have a say in such design [4] and greater equality for marginalised populations who are most often positioned as powerless end users [5, 6]. In contexts of conflict, this means shifting the focus from “resolving” disputes to designing processes that allow people to remain in relationship even amid difference, thus “transforming” them. If peace is not a product but a process, then a PD approach can be adopted to design peacebuilding processes or any process that endeavours to foster understanding between stakeholders in conflict. To achieve this, PD must engage with how to create and sustain ecosystems that nurture coexistence and transform conflicts through the relational possibilities that human interaction affords.

This paper has been authored through a reflexive process between the two authors who come from different backgrounds using participation: one from Peace and Conflict Studies that engages with participatory action research as both conflict transformation practice and knowledge production, and another from urban planning and conservation that engages in participatory planning, heritage and design. The paper argues that a transformation-oriented

process requires a form of PD that does not seek closure through resolution, but instead designs spaces for listening that sustain coexistence and positive peace (not only the end of violence, but the grounding for just and peaceful relations) [7]. It is in this spirit that *Facilitative Listening Design* (FLD) was first introduced in Cambodia in 2017, and has since been implemented in multiple iterations on issues of conflict and social justice in Cambodia, Vietnam, and Thailand.

FLD is a participatory and action-oriented research methodology co-developed in Southeast Asia centring on the human act of listening among groups in conflict, where the inquiry process itself is the result of collaborative design by those most directly impacted [8]. Community members from conflicting groups take on the role of researchers to collaboratively design the inquiry process and engage with “the other” through contact that enables both reflexive participation and analytical distance, each of which can be drawn upon as needed and serve as a form of mediation-in-design when approaches beyond dialogue through conventional structures are required. The methodology places equal emphasis on creating relational infrastructures—supporting architecture for facilitated contact that cultivate the encounter between opposing groups for deeper relationship-building as they conduct research together [9]. Given that the evolution of FLD as both a method of inquiry and an intervention in conflict has primarily followed an inductive trajectory shaped through iterative implementation and continuous reflexive learning among practitioners and users, this paper explores the articulation of its process and design through a conceptual framework grounded in Björgvinsson, Ehn, and Hillgren’s [4] from things to Things, and their move from “projectioning” to “infrastructuring” in understanding how the inquiry process might be more intentionally designed for transformative outcomes. In this context, FLD demonstrates the potential of *conflict transformation by design*, offering an example of how PD can contribute to positive peace not by merely aiming to eliminate conflict, but by fostering the conditions for dialogue, recognition, and ongoing transformation.

2 AUTHOR STANDPOINTS AND DISCIPLINARY PERSPECTIVES

This paper was developed through reflexive engagement between the two authors. Raymond is a co-developer of Facilitative Listening Design (FLD), the method described in this paper, and has implemented the approach in practice since 2017 in collaboration with local organisations across Southeast Asia prior to commencing a doctoral degree. His background is in conflict transformation and peacebuilding, where FLD emerged as a practitioner-led, participatory approach designed to support dialogue, relational engagement, and sensemaking in contexts of conflict and social justice. November is an urban planning and heritage professional who has implemented participatory planning, heritage and design projects in the public sector and as a community organiser. She is now a doctoral candidate exploring the role of PD and PD practitioners in heritage conservation and urban design.

We are both practitioner-scholars, bringing our longstanding practices into academia following careers in distinct forms of participation and engagement with the communities in which we work.

Together, we bring distinct disciplinary perspectives in conflict transformation and PD to this work. We approached the paper reflexively, recognising that our different expertise shaped how FLD was interpreted, framed, and translated for a PD audience. Through dialogue across these disciplines, the paper introduces FLD as an interdisciplinary contribution, bridging peacebuilding practice and PD research while attending to questions of power, relationality, and the politics of knowledge production.

3 CONFLICT TRANSFORMATION THROUGH INQUIRY BY DESIGN

PD is a process of collective learning, reflection and negotiation of shared futures and values between multiple stakeholders directly affected by the design [10, 11]. While PD emerged from a philosophy of inclusion, care and social change, it also faces systematic conflicts and the “Realist challenge” of implementing social designs [12]. In addressing conflict, this intersection between PD and peace research creates opportunities for mutual learning. For one, social designers can look to work on positive peace and conflict transformation which reframes conflict as an ongoing process of change rather than a problem to be resolved, drawing attention to relational and structural dimensions. At the same time, traditions of transformative research position inquiry as a participatory and action-oriented practice that contributes to social change, even possibly through the research process itself with intentional design. Together, these perspectives establish the conceptual terrain in which FLD is introduced as both method of inquiry and intervention.

3.1 Positive peace and conflict transformation

Positive peace, first articulated by Johan Galtung [7], extends beyond the absence of overt violence to encompass the presence of social justice, equality, and sustainable relationships. It is concerned not only with the elimination of conflictual acts or the absence of “personal” violence but with the “absence of structural violence” [7:183]. It cultivates generative conditions that allow societies to live together in non-violent, equitable, and mutually supportive ways through fostering social systems and structures that embed fairness and dignity, enabling individuals and groups to interact on the basis of recognition and reciprocity rather than domination or fear. This creates an enduring culture of peace that can withstand conflict, and possibly even leverage it as an opportunity for change. The notion of positive peace provides a horizon within which PD practices can be situated when designing for social change. Conversely, by focusing on the infrastructures of dialogue and inclusion, PD approaches can contribute to positive peace by cultivating the relational and structural conditions that make peaceful coexistence possible through a designed process centred on collaborative inquiry.

In building positive peace, the field of peace studies has also advanced the notion of conflict transformation, most prominently developed by John Paul Lederach [1, 2, 13, 14] and further elaborated by scholars such as Miall, Ramsbotham, and Woodhouse [15], and Väyrynen [16]. Lederach [14] argues that transformation requires attention to the web of relationships within divided societies,

and peace is sustained by nurturing new relational capacities, empathy, and accountability that allow difference to be held without violence. Rather than seeing conflicting values and socio-political realities as eroding the idealism of participative design [12], a conflict transformation approach reflects what Mouffe [17] terms as agonism, which sees democracy as a tolerance of multiple perspectives exchange through healthy discussion and debate rather than striving for consensus or what is often seen as conflict resolution. The intersection of these fields points towards practices that do not aim for premature closure but instead design processes and infrastructures of encounter where communities can imagine and inhabit alternative futures together even amidst disagreement or differing worldviews that can live in conflict but without violence.

3.2 Transformative research

In achieving conflict transformation, FLD adopts the approach of transformative research which builds upon long-standing principles of action research. Transformative research position process as equally important as outcomes in generating both new knowledge and new capacities for knowledge creation [18]. Bradbury's [19, 20] evolving concept of *Action Research for Transformations* (ART) expands this tradition by framing transformation through three inter-related spaces: the relational, conceptual, and experimental, that together allow inquiry to be lived as practice rather than merely applied as method. Within this orientation, research becomes transformativea means to reconfigure relationships, redistribute power, and foster social, economic, and environmental justice [21, 22]. Although the literature remains fragmented, studies increasingly recognise that research encounters can facilitate reflection, nurture empathy, and influence behaviour, suggesting that inquiry designed with intentional reflexivity can act as a catalyst for change [23, 24].

Building on this lineage, recent scholarship has focused on embedding transformative potential directly into research design. Mertens [21] calls for researchers committed to change to consider how their methodological choices can support transformative and sustainable impact. Similarly, Nardon, Hari, and Aarma [24] propose the interview as a participatory and reflective tool through which transformation is enacted rather than observed. These approaches complement a growing recognition that research itself can serve as an intervention, capable of generating relational and cognitive shifts among those involved. In this view, transformation is not an outcome that follows research but a process that unfolds within it. The implication is that well-designed inquiry can foster transformation across multiple dimensions: individual, relational, and collective when it is undertaken as a shared process of sensemaking and reflection rather than as a detached act of data collection and analysis.

3.3 Inquiry by design

While inquiry is found within the PD toolbox, it is often a top-down relationship between the researcher or designer directing the inquiry with stakeholders and users as participants [11, 25]. In FLD, inquiry is both design process and design. Unlike most research design in traditional methods, it is not a preparatory phase that enables research to happen later. Instead, inquiry is intentionally

designed as the very means through which participants come to explore, interpret, and respond to issues together. The design process continually shapes and reshapes inquiry as people join, contribute, and reflect. This approach shifts design from a technical or creative function to a participatory form of learning in which inquiry itself becomes a site of collaboration and growth.

The FLD methodology, which is described in the next section, echoes what Björgvinsson, Ehn, and Hillgren [4] described as *things to Things*, where FLD creates a socio-material assemblies in which people, artefacts, spaces, and practices gather to negotiate concerns and possibilities. Each phase of FLD is a dynamic process of asking, listening and making sense collectively. Each stage becomes an iterative space where inquiry, design, and multiple forms of participation and agency intersect. The research then unfolds in steps that gradually deepen participation. FLD leverages Lederach's [14] emphasis on the moral imagination as the capacity to envision relationships even amidst division by bringing together groups in conflict with one another as both researchers and participants. The design Things within FLD invite participants into relational encounters that hold tension and possibility together. These encounters are not managed but made, as participants design and inhabit spaces of inquiry that sustain connection across difference. This understanding shifts the emphasis from designing a study to designing the very encounters through which inquiry unfolds.

4 FLD AS INTERVENTION THROUGH INQUIRY

4.1 Background

FLD was developed as both a methodology and a peacebuilding intervention in contexts marked by entrenched conflict [26–29]. Rooted in Southeast Asia, it responds to the limitations of conventional dialogue-based approaches by foregrounding listening as a method of inquiry rather than persuasion. In doing so, FLD builds a process where research and intervention unfold simultaneously: participants are not merely sources of data but active researchers (referred to as “Listeners” in FLD) whose inquiries create new relational possibilities across lines of division. This happens when conflict groups are brought together in the inquiry process, and ultimately conduct research together as partners, engaging in the messy realities of research implementation as part of the conflict transformation framework of the method itself. This has been observed in Cambodia where FLD was adopted over multiple iterations by minority or marginalised communities to understand sensitive issues within and across groups [9, 30–32]. Those involved and who are affected by the conflict or issue of social justice under study are ideally co-authors of publications, co-developers of artefacts of knowledge mobilisation, and can recount both their experiences and the research as a whole in their own words and through their insights and lived experience [32]. A recent iteration of FLD used in the ongoing Cambodia–Thai conflict in 2025 with 24 co-researchers from both countries has demonstrated how research itself can serve as peace infrastructure to keep cooperation going even in contexts where relational windows appear to be closing between opposing sides [33].

Unlike dialogic processes that often aim for consensus or closure, FLD designs a sequence of encounters that privilege open-ended inquiry. In all FLD initiatives, participants are trained to listen across differences, not in order to resolve disputes directly, but to generate new knowledge about the conflict and about one another. This shift repositions the very purpose of engagement: listening becomes a deliberate act of design, serving as an act that can hold tension and nurture transformation. FLD also challenges conventional divides between research and practice. As a methodology, it produces data and knowledge that can be documented, interpreted, and disseminated. As an intervention, it reshapes relationships and creates spaces for transformation. This dual character positions FLD within a PD ethos: the process is co-created with participants, adapted to their lived realities, and values collective meaning-making over externally imposed outcomes.

At its core, FLD embodies what might be described as *conflict transformation by design*. Each stage of the process is carefully structured to enable participants to move gradually from orientation to collective reflection, from individual encounters to shared analysis. The methodology is not a single event but a deliberately sequenced design, where inquiry unfolds across nine interconnected stages that guide participants in building the capacities and relationships required for living together differently in the aftermath of conflict.

4.2 Design stages

FLD is conducted in steps which have been outlined in the FLD Handbook [8]. In this paper, we propose to adapt the FLD process steps for a wider PD practice based on applications implemented in Southeast Asia such that inquiry becomes a co-designed endeavour with end users who identify with the communities of study.

- *Orientation*: The process begins with orientation, in which initiators (typically within communities affected by conflict or facing marginalisation) identify the broad thematic terrain and conflictual dynamics to be explored. This step foregrounds the principle that inquiry must be situated within the lived realities of those directly affected. Rather than predetermined research questions, orientation allows initiators from impacted communities to establish the direction of exploration in ways that reflect their own priorities and sensitivities.
- *Collective*: Following orientation, those wishing to initiate FLD as inquiry to a topic of mutual interest form an initial collective of likeminded persons. This involves gathering a small group of individuals who are willing to engage as co-researchers and co-designers of the process. The collective serves as both Design Team and a representative body, ensuring that methodological decisions are grounded in community perspectives.
- *Design*: With the collective in place, attention turns to design. Here, the Design Team begins to develop and customise research instruments and processes that are accessible, dialogic, and non-extractive. Design at this stage is less about technical precision and more about establishing conditions that enable inquiry across difference.
- *Selection*: The next stage involves the selection of Listeners—the core participants who may come from both sides of a

conflict, or from marginalised groups investigating issues that affect them, who will carry out the inquiry. Selection is deliberate and relational, balancing representativeness with the capacity to engage empathetically. This step underscores the recognition that not all community members are equally positioned or prepared to engage across conflict lines.

- *Training*: The initiators and Design Team then facilitate training for Listeners through what is referred to as the “FLD Coaching and Training Lab.” This laboratory space introduces the selected Listeners to inquiry methods, ethical considerations, and dialogic practices. Training also creates a reflective environment where participants rehearse relational encounters before moving into more sensitive fieldwork contexts.
- *Engagement*: Engagement constitutes the central fieldwork phase of FLD. Once trained, Listeners go back into their communities and search for people, often based on selected demographics they may have already identified, to engage as participants (referred to as Sharers in FLD). Always in pairs, two Listeners conduct inquiry-based conversations, most commonly with Sharers they consider of their own community, or who they identify with to some extent. This phase is distinctive for its emphasis on listening as a structured practice of inquiry, creating opportunities for recognition, relational accountability, and dialogue.
- *Processing and analysis*: Following engagement, Listeners reconvene for processing their own data and engaging in collaborative analysis with the full group in what is called the Information Processing and Transformative Space Lab. Analysis unfolds through collective interpretation and verification of the data. Unlike conventional research analysis, this stage is participatory, iterative, and dialogic, emphasising not only thematic coding but also the relational dynamics that shape interpretation. Listeners present lived experiences from Sharers which allows them analytical distance from their personal immediacy to the subject. Analysis becomes a site of negotiation between Listeners, where knowledge is situated and meaning co-constructed both with members of their own group, and ultimately with the group they may consider “the other” if working within a conflict.
- *Transformation and action planning*: After listening intensely to others over the course of data collection, processing, and analysis, Listeners engage in a more reflective stage that both acknowledges their own individual perspectives as well as those of their fellow Listeners from each side of a conflict. In this space, Listeners finally shift from their analytical distance to a reflexive stance and explore any changes or transformations they may have experienced through their FLD engagement and contact with others. Following this, the Design Team leaves the space to give Listeners the opportunity to decide if they wish to continue collaboration. If they choose to do so, they generally have time to consider next actions and ultimately pitch any ideas to the Design Team who aim to help resource or discuss how to make next steps happen.



Figure 1: FLD is deployed through steps of inquiry embedded within relational infrastructures that guide research through contact, logistics, and activities to cultivate transformation among participant-researchers and the communities they both identify with and study through the encounter itself.

- *Translation:* Finally, FLD moves towards translation, where findings are communicated outward in forms that are accessible and resonant for wider audiences. Books are often published and launched, though translation is not limited to written accounts. More expressive formats convey FLD findings such as performances, exhibitions, or digital media that enable wider publics to engage with the insights generated.

It is critical to understand that the research process does not necessarily drive the transformational prospects independently. These steps are implemented to weave a web of relationships [16] fostered by relational infrastructures that bring participants together through encounters cultivated in contact, logistics and activities extending beyond inquiry alone [9]. These details, although often viewed as periphery or in the background of research and design methodologies, are in fact essential in transformative research design with intentions to change the issue at hand. Thus, FLD progresses through design and is implemented within the relational infrastructure that supports an unfolding process generating knowledge whilst providing the relational, experimental, and conceptual spaces [19] for transformation (see Figure 1).

5 FLD AND PARTICIPATORY DESIGN

Through FLD, PD takes on a dynamic, relational and material practice through which listening, reflection, and sense-making collectively are continually configured and invite new publics into being around shared, and often contested, matters of concern. Akin to Björgvinsson, Ehn, and Hillgren's [4] concept of design *Things*, each FLD stage is a design Thing where inquiry becomes both the method

and the medium of transformation, gradually weaving a web of relationships that embodies the very change it seeks to understand [14].

Orientation encounters, the Coaching and Training Lab, the Information Processing and Transformative Space Lab, and public sharings operate as Things or temporary assemblies that hold together diverse actors, issues, and materials. Artefacts such as workshop notes, conversation reconstructions, visual arts, and recorded reflections serve as mediating elements that shape dialogue and meaning-making. These Things are not merely research outputs or results of engagement but ongoing co-created representations that hold the traces of encounter and tensions negotiated through it, progressively illustrating how participants engage, interpret, and relate. By participating in these socio-material gatherings, Listeners, Sharers, facilitators, and eventually even audience members, co-produce the conditions of inquiry rather than working within pre-established ones. It enables them to work with experience, uncertainty, and emotion as legitimate materials of inquiry.

Seen this way, conflict transformation through inquiry by design describes how participants collectively reshape both what is known and how knowing takes place. The process is aesthetic in its attentiveness to form and feeling, and dialogic in its capacity to sustain conversation across difference. Through these iterative acts of making and reflection, design becomes a method of peacebuilding in itself—not a preparatory exercise but a continuing practice through which people learn to listen differently, imagine collectively, and inhabit emerging relationships of change.

6 CONCLUSION

This paper has proposed FLD as both a method of inquiry and a PD approach for conflict transformation and peacebuilding. By situating FLD within the conceptual terrain of positive peace, conflict transformation, and transformative research, the paper has argued that the potential of PD lies not in resolving conflict but in sustaining the conditions for coexistence through relational and reflective inquiry. Through its sequenced stages of orientation, collective formation, design, selection, training, engagement, processing, analysis, and translation, FLD demonstrates how inquiry can be structured as a participatory infrastructure for learning and transformation. Each phase functions as both a design and an encounter, enabling communities to generate knowledge about themselves and one another while nurturing new relational capacities. Rather than seeking closure or consensus, FLD sustains open-ended dialogue that holds difference, tension, and uncertainty as generative materials of inquiry.

Applying FLD in a wider PD practice, the paper has illustrated how adopting FLD-based inquiry as an approach in PD can create an evolving and collective practice rather than a bounded phase preceding research or implementation. FLD enables PD to serve as an alternative mode of peacebuilding that treats listening as a transformative act and research as a relational intervention. In doing so, it expands the scope of PD from designing artefacts or systems to designing the human conditions for coexistence. This approach invites further exploration of how design can be mobilised as a practice of relational imagination, and how designers can approach conflict in participative design by not setting out to eliminate conflict but to continually redesign the ways we live, inquire, and transform together.

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Reframing Participation in ICH in a Decentering and Decolonising Design Perspective

Drafting guiding principles from a review of literature and of funded projects

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Abstract

This exploratory paper aims at providing some early theoretical insights contributing to the redefinition of the evolving landscape of Participatory Design (PD), hypothesising a set of principles for reframing it with a decentering perspective in the field of Intangible Cultural Heritage (ICH). ICH, as local knowledge and cultural practice, is a potential trigger for mutual understanding, dialogue and coexistence, addressing transformative changes towards sustainability; on the other hand, participatory as well as co-design process, practices and methods, are increasingly used in community projects, as means to foster inclusion, equity, and resilience for ICH activation (acknowledgement, sharing, transmission, experience and re-use), especially in sensitive contexts, like minority groups, marginalised and impaired people. However, these processes often (sometimes unconsciously) see design acting as a structure of authority and power that, according to a Western model based on a tendentially colonizing approach, is placed in a position of presumed superiority (of knowledge, resources, capacity, skills) with respect to the object of the project, i.e. the heritage and the communities. Drawing from a mixed narrative and integrative literature review approach (from which it emerges that awareness on this topic is beginning to make its way into the scientific-academic community) alongside a qualitative analysis of about 30 research projects funded under European research programs (that shows how these critical positions are applied and work in practice), the paper proposes some guiding principles to “decentralize” the practices and habits related to participatory design in the field of intangible cultural heritage, in order to support a real epistemological and disciplinary change towards an ethic and decolonizing approach in participation.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design.

Keywords

Intangible Cultural Heritage, Participation, Decolonising, Distributed Leadership, Endogenesis



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1 Participatory design and ICH rhetoric

In a changing world of Cultural Heritage (CH) [1], as declared by European Commission [2], the Intangible Cultural Heritage (ICH) is a fundamental driver for more resilient societies. Anyway, if embracing the rhetoric of multiculturalism, it can be also subject to radicalisation, extremization and cultural fundamentalism led by conservation choices.

Advocating for a dynamic and evolutionary nature of ICH, in addressing the DEAI (diversity, equity, accessibility and inclusion) imperative, always more often participatory and community-cantered approaches promote active citizenship and valorization of cultural differences and identities with the assumption that they constitute the basis for truly effective and sustainable plural processes.

Accordingly, the literature on participation in the field of cultural heritage is extensive and consolidated. To name just a few, we speak of community heritage [3], indigenous curation [4], interpretive communities [5], participatory museum [6], crowdsourcing in CH [7], participation in CH [8, 9], co-creation [10].

However, some criticisms have recently emerged that highlight how there is a risk of “romanticizing” and idealizing participation [11], when instead it can inadvertently reinforce forms of control [12], generating divisions based on how the concept of democratization is practiced [9]: for example when the role of participants is ambiguous (requiring continuous re-negotiations of leadership) [13], or because experts are the only source of power and authority [14, 15]. We speak of *tokenism*, or the possibility of having a role in a hegemonic narrative, but without being able to significantly transform it [16]. Torretta et al. [17] explicitly address the need to become aware of our position in society and the power, privileges, politics, and access (3P-A) that comes with it, proposing the notions of *pluriversal participation*, *pluriversal presence*, and *pluriversal directionality*. Scholars framed the concept of decolonising design [18] and design research to advance design practice towards pluriversal-ity [19]. The *Decolonising Design Collective* too aims at challenging mainstream design and universal ideas about design and participation. Udoewa [20] introduces the concept of Radical Participatory Design as a meta-methodology to support equitable processes of

initiation, participation and leadership. Finally, as demonstrated by Paananen et al. [21], whereas technology itself appears as neutral, it is applied in CH context through a lens of values which can be intertwined with politics and power.

In this framework, the Cultural Heritage (CH) system amplifies the enormous urgency of decolonizing and decentralizing its processes [22, 23], with a design approach [24–26], to truly address a pluriverse development [27, 28].

2 SCOPE and methodology of the study

This is a scoping paper that acts as preliminary work for further investigation, attempting to provide initial indications of the potential extent and nature of an emergent topic at the intersection of PD, decolonising design, and cultural heritage policy.

The aim is to provide the reader with a first background for understanding current knowledge and highlighting the significance of the research that is needed to be developed in this field.

The paper uses a semi-systematic research approach, suitable for exploring complex and interdisciplinary topics.

The literature review is based on a mixed narrative and integrative method. According to a narrative review, it is structured to qualitatively identify primary studies within the topic and extract relevant content, using several keywords, combining them in an appropriate manner by the use of inclusion and exclusion criteria to ensure validity and minimizing bias of subjectivity in data selection and interpretation [29]. According to an integrative review, it critically analyzes, integrates and interprets the existing literature in a holistic understanding, in a way that enables new theoretical frameworks and perspectives to emerge [30]. The process of review and analysis of the articles is qualitative, focusing on identifying themes, narratives, and contextual meanings.

The case study research has been semi-systematic as well, employing a qualitative selection framework and a comparative cross-case analysis.

A more detailed analysis of empirical data is still ongoing and, as a result, the paper does not provide definitive conclusions, but a firm basis for further exploration.

3 Literature review

The objective of the literature review (and its primary research question) is to discuss how the participatory approach is framed in the dominant scientific narrative of design: if it is affected (inadvertently) by exogenous thinking that leads to bias or misuses of participation, or conversely, if it is consciously employed to address effective decolonizing processes in CH.

Therefore, the analysis has been conducted on design research articles in mainstream design journals which present, to different extents, reflections or case studies employing community-based participatory design practices in CH.

The selection (inclusion/exclusion) criteria for LR are as follows:

- Span of years: 2013–2024;
- Search base: a list of renowned international design focused journals selected from Gemser et al. [31] plus some recently established international journals (see table 1).
- Only paper from the chosen list of design journal (no paper from any conference has been considered, nor open access

articles or books: a deliberate choice in order to reveal the mainstream narrative promoted by such journals).

- Two keyword lists have been defined, the first about PD and the second about CH, using as inclusion criteria the direct reference of the keywords in the title or in the article text (see table 2).

More than 100 design research articles have been scrutinized, and 50 have been considered relevant and analyzed.

The analysis has been qualitative, reviewing the content by detailed reading to compare and evaluate the different assumptions, definitions, aims, developments and uses (or misuses) of participatory practices in CH.

Two panels have been determined: Panel 1 related to Participatory Design and Panel 2 focusing on Participatory Design in CH, with a focus on ICH.

Many of the articles of Panel 1 on PD are merely instrumental, discussing methods, tools and techniques [32] without questioning or even mentioning the possible risk of a domesticating approach and falling into solutionism and toolification. Others have a paternalistic approach in the way they try to use design to empower low-income and “developing” contexts to overcome “deficiencies” in knowledge [33]. Some authors acknowledge that in PD with vulnerable groups, any attempt at “genuine inclusion” can be challenging, since barriers to participation remain [34]. Some others instead raise concerns about PD: Kelly [35] calls for ethical principles for PD practice; Dore [36] emphasizes the potential instrumentalization and failure of PD, challenging its claims to be democratic if it is used with a technocratic and uncontested institutionalized approach; Kraff [37] explores “agonism” within PD processes to question power structures, but also highlights some preconditions for engaging. In general, the concepts of indigenous design became relevant when discussing the legacies of colonialism and entrenched systems of “othering”. Indigenous-focused design methodology based on storytelling is conceived as a co-design space for cohesiveness and conversation by Barcham [38]. Akama, Hagen & Whaanga-Schollum [39] propose respectful, reciprocal and relational approaches as an ontology of co-designing social innovation, to overcome the asymmetry of collaboration by reciprocity and mutual understanding; these authors also contest the use of binary categories like “Indigenous” and “non-Indigenous”. Raman & French [40] claim to contribute to a right-based ethos for PD and provide a framework to shift the mindset of PD by individualized and subjective methods on sensitive topics. Finally, a few papers explicitly rebut optimism about participation [41], or highlight the risks co-design poses for democracy in the redistribution and delegation of power [42].

Most of the articles related to PD in CH and museums consider participation and co-design as instrumental to enriching the experience of the heritage [43, 44], without mentioning any potential bias. Critical thinking emerges in the problematization of PD in CH, but without explicitly mentioning the word decolonizing. Taffe & Kelly [45] highlight the difficulty of using PD approaches for creating community museums, because participants’ roles became ambiguous; Tang & Nakarada-Kordic [46] claim to use critical design as a means of sparking discussion and debate in participatory exhibitions. Finally, a few studies explicitly refer to decolonizing

Table 1: List of design journals

Journal	List
The design Journal	from Gemser <i>et al.</i> 2012
Design and Culture	from Gemser <i>et al.</i> 2012
Design Issues	from Gemser <i>et al.</i> 2012
Design Studies	from Gemser <i>et al.</i> 2012
International Journal of design	from Gemser <i>et al.</i> 2012
She-Ji	added
CoDesign	added
Strategic Design Research Journal	added

Table 2: List of keywords

PD	CH
Participation	Cultural heritage
Participatory	Museum
Co-design	Collection
Co-creation	Human Treasure
Co-production	Identity
Co-curation	Expression
Citizen Curation	Performance
Collaboration	Craft
Collaborative	Dance
Engagement	Art
Involvement	Theatre
Inclusion	Language
Integration	Traditional Knowledge
Diversity	Living Heritage
Community	Intangible cultural heritage
Accessibility	

PD in CH. According to Rizvi [47], decoloniality becomes a critical heritage discourse when it is critically negotiating the past and can be unfolded by community-based participatory practices. Kambunga, Smith, Winschiers-Theophilus and Otto [48] argue that it is an intentional design practice that is capable of supporting alternative ways of knowing and doing in practice, even in the PD field: in a participatory memory-making project in Namibia, they employ a safe space framework for decolonizing PD, a space informed by the notion of “cultural hybridity”.

In general, however, in the papers analysed, all the critical stances on decolonizing design, participatory practices and cultural heritage remain at a somewhat theoretical level, discussing such concepts as sensitivity, reciprocity, dignity, positionality, dialogue, democracy, intersectionality, activism and resilience in PD. It is also not yet evident how these critical stances are applied and working in practice, nor any clear assessment of their effectiveness is provided. Therefore, a systematic analysis of applicative research projects is provided in the following section, to critically discusses and evaluate the effectiveness and impact of inclusive, participatory and co-creative design processes in the cultural field, in a decolonizing perspective.

4 review OF EC funded projects

The objective of the case study research is to give evidence, if any, of how decolonising participatory design processes is applied and works in practice in projects within the cultural heritage domain, and especially the ones informed by the top-down research agenda of heritage policies in the framework of EU.

The analysis is developed on collaborative research projects, funded under the European Community (EC) competitive calls, which employ community-based participatory practices in the valorisation of CH (understood in a broad sense: traditional, intangible, contemporary...).

The selection (inclusion/exclusion) criteria for the projects are the following:

1. Projects funded by EC Calls.
2. Years 2014-2023 (to include the H2020 and Horizon EU programs).
3. Calls related to to CH, by the presence of keywords (see Table 2).
 - Declared presence of participation or
 - Implicit participation detection (by the presence of keywords: e.g. engagement, codesign, co-creation...) (see table 2).

In particular, the cross- case analysis has been conducted on the dimensions of participation, if described or appreciable through project reports or results, and beyond the quantification of the actions and the number of stakeholders and public involved, in the following three variables:

1. Processual dimension: the phase(s) of the cultural heritage value chain [49, 50] in which participation is designed and/or occurs;
2. Relational dimension: the breadth or extension and intensity of the interaction between the entire ecosystem of stakeholders
3. Performative dimension: the real freedom in action and contribution allowed by participatory design practices and its transformative effect.

In addition, the comparison of the cases addressed the declared presence or implicit detection of any decolonising, plural and ethical approach applied within the projects (by listing them through key words: e.g. plural narratives, ethics for participation, etc.). Finally, the ways of using technologies in participatory processes (declared presence) has been detected.

Table 3: List of projects funded by EC

Call	Projects (and sub-call)
H2020-REFLECTIVE-2014-2015	Traces; Cohere (REFLECTIVE-2-2015- Transmission of European cultural heritage) Crosscult; Arches (REFLECTIVE-6-2015- Innovation ecosystems of digital cultural asset) Culturalbase (REFLECTIVE-9-2014)
H2020-SC6-CULT-COOP-2016-2017	Reach; Culture Labs; (CULT-COOP-06-2017- Participatory approaches and social innovation in culture) Pluggy (CULT-COOP-08-2016- Virtual museums and social platform)
H2020-SC6-TRANSFORMATIONS-2018-2019-2020	Incultum; Textour (TRANSFORMATIONS-04-2019-2020- Innovative approaches to cultural tourism) Uncharted; Spice; So-Close; Traction; Memex (TRANSFORMATIONS-08-2019- Collaborative approaches to cultural heritage) Mingei (DT-TRANSFORMATIONS-12-2018-2020- Curation of digital assets and advanced digitisation) Sophia (TRANSFORMATIONS-16-2019- Social platform on the impact assessment) Artformation (TRANSFORMATIONS-17-2019- Societal challenges and the arts) ReInHerit (TRANSFORMATIONS-19-2020- Cooperation between European museums and heritage sites) inDICEs (DT-GOVERNANCE-13-2019 - Digitisation and European culture)
H2020-SC6-GOVERNANCE-2018-2019-2020	
HORIZON-CL2-2021/2022/2023-HERITAGE-01	Shift; MuseIT (HORIZON-CL2-2021-HERITAGE-01-04- Preserving and enhancing cultural heritage with advanced digital technologies) Glammons; Recharge (HORIZON-CL2-2021-HERITAGE-01-02- New ways of participatory management) Rise-up (HORIZON-CL2-2022-HERITAGE-01-01- Safeguarding endangered languages) Culturati (HORIZON-CL2-2022-HERITAGE-01-02- Europe’s cultural heritage and arts) Nardiv (HORIZON-CL2-2022-HERITAGE-01-03) Tracks4Craft (HORIZON-CL2-2022-HERITAGE-01-04- Traditional crafts for the future) Epic-We; Great (HORIZON-CL2-2022-HERITAGE-01-09- Games and Culture) Heritact (HORIZON-CL2-2022-HERITAGE-01-10- NEB) Reevaluate; Digicher; (HORIZON-CL2-2023-HERITAGE-01-03 - Re-visiting the digitisation of cultural heritage) Conciliare (HORIZON-CL2-2023-HERITAGE-01-04- CH in Transformation)

23 Calls have been considered relevant and scrutinized, and among the 91 projects initially included, 34 (see table 3) were considered to meet the criteria and were therefore analysed in detail (by websites and project deliverables, such as reports, articles etc). It is necessary to underline that, differently from literature review, a specific focus on institutional forms of ICH is not present in all the selected projects: some projects are dealing with performative arts, community memories and identities, contentious histories, endangered languages, traditional craft and minority practices and knowledge, but the majority of the projects work longitudinally among the wide spectrum of CH, especially the ones dealing with technologies or with social cohesion aims. Therefore, in order to not reduce the sample, CH projects have been considered too, and the reflections on participative approaches can be related both to institutional ICH forms and to immaterial values, meanings and processes of tangible CH, in a more comprehensive interpretation of “intangible”.

Since the cases are different for contextual conditions and outcomes, the analysis of the projects has been qualitative, using a causal-process observation to identify pattern or causal mechanism that could provide insight into the relationship among the three variables of participation considered and the decolonising approach

eventually introduced. In particular, by inductive reasoning, necessary and sufficient conditions [51] have been hypothesized to make correlations among them.

However, at this stage of research, and due to length constraints, in this exploratory paper, only a chronological synthesis will be provided by citing specific projects (which, however, cannot be described in detail) and two specific examples will be provided (by anonymized projects) to illustrate the prior considerations..

By observing the calls and the projects, it is possible to read the evolution of research trends and trajectories on participation in the different temporal phases with respect to the “canonized” participatory methodologies and their application, but also with respect to how the very concept of participation is understood and interpreted, especially in the early years examined.

At the beginning of the time considered, terms such as inclusion and accessibility are often used inappropriately if not instrumentally: they are only declared but not substantiated by a clear practical application in the projects, because they are cited as indirect results of the application of emerging technologies in that time (immersive technologies, virtual and personalization) but are not connected to real and designed participatory processes. With the publication of a call explicitly addressed to participation (CULT-COOP-06-2017 Participatory approaches and social innovation in culture)

this approach is brought to the fore. However, even though emancipatory concepts such as “community-controlled and community-managed research” are starting to be made explicit, participation often remains an objective of the projects, to be achieved through technologies, and not an approach also used in the design process. With the subsequent calls (H2020-SC6-TRANSFORMATIONS-2018-2019-2020) participatory models are acquired and used widely, and are applied, in addition to experiences addressed to end users of the heritage, for co-curation, co-creation, participatory management projects in very different cultural heritage areas (work, art, intangible heritage...). Participation is often supported using technologies and becomes more concrete, because it is a structural practice of some processes (e.g. co-design methodologies declined in the co-curatorship of contents), and not only a result to be achieved and enabled. Two other interesting aspects emerge: reference is often made to sensitive targets (migrants, minorities, disadvantaged groups) and a systematic assessment of the design processes begins, albeit sporadically. With the launch of the new Horizon Europe program, the importance of the participatory management approach is confirmed through a dedicated call (HORIZON-CL2-2021-HERITAGE-01-02: New ways of participatory management and sustainable financing of museums and other cultural institutions), that is, deploying the potential of participation not only towards the end users of the heritage but also in the initial and intermediate phases of value creation of the cultural supply chain, thus recognizing the contribution of the entire ecosystem of stakeholders (and in particular also Cultural and Creative Industries CCI) in the creation and management of the heritage [52]. At the same time, thanks to subsequent calls, attention is growing towards an ethical dimension of participation (through concepts such as equal opportunity principle, cultural diplomacy to counter identity-based post-colonial discourses, minority communities, colonial heritage) and finally also a critical approach towards technologies. In this way, the foundations are laid, through a series of proposals for “conscious design practices”, for a more mature approach to the heritage enhancement project.

Concerning the case comparison regarding the three variables, a preliminary synthesis is reported as follows. At the processual level of participation, this schematization of the phases of the cultural heritage value chain was used [52]: Infrastructure & management; Preservation.; Audience development; Services. The phases where participatory processes are located in most projects are those of audience development and infrastructure and management; in this last phase in particular, co-design actions are promoted when the projects are also oriented towards organizational changes in cultural institutions linked to digital transformation or in the co-creation of cultural offering (an example is *Culturati* project, a platform that enables CCIs, and citizens to create content collectively); anyway the projects do not really question the power dynamics between institutions and the constellation of actors in the system. At the relational level, a significant extension of the types of participants involved is appreciated, ranging from communities that hold the heritage, users of the heritage, businesses and creative studios, technological partners. An example of extending the relational dimension of participation is the *Digicher* project, whose methodological approach for revisiting the digitization of CH towards more equitable process for minority communities, flattens the one-way

hierarchical relationship among stakeholders and used multilingual communication. However, at the performative level, it is difficult to evaluate (from the reports and results of the projects) the real authorial contribution (i.e. genuinely unguided) of the participants involved as well as its transformative impact on the overall project. This is mainly because although the projects explicitly declare an attention towards cultural diversity or disadvantaged targets, what is generally evaluated is the overall impact of the project on society, policies etc. and not the quality and effectiveness of the participatory models and processes adopted in themselves. One example is the *Heritact* project, that seeks to enable and enhance the performative and transformative levels of participation by digital tools for community-led design and negotiation among stakeholders, but the impact assessment is mainly on the effect on heritage.

Anyway, in term of conditions and successful pathways to the adoption of a truly decolonising approach, enabling in deep both the performative and relational dimension proves to be a necessary pre-requisite for decolonising participatory processes, but not a sufficient condition. A large processual dimension (participatory processes adopted along the whole heritage value chain) can partially replace the extended relational dimension needed to support plural approaches but don't guarantee the decolonising of participation as well. Similarly, the presence of ethical concerns (especially about sensitive targets) does not automatically lead to a genuine and transformative participation.

Finally, the role of technologies has been scrutinized: their use has increased consistently in the last 10 years, following the trends of adoption promoted by the EC (especially at the beginning of the period considered: see calls CULT-COOP-08-2016- Virtual museums and social platform; DT-TRANSFORMATIONS-12-2018-2020- Curation of digital assets; HORIZON-CL2-2021-HERITAGE-01-04- Preserving and enhancing cultural heritage with advanced digital technologies). Only in recent years a more critical approach was proposed to rethink the role of technologies (see call HORIZON-CL2-2023-HERITAGE-01-03 -Re-visiting the digitisation of cultural heritage). Anyway, the use of technologies is mainly instrumental and there are very few references and critical and ethical measures to mitigate the biases caused by technology in including or excluding actors depending on their gender, cultural inclination or digital literacy. An example is *Digicher* project, that designed a framework for ethical digitisation. Therefore, a genuinely critical stance on digital decolonization must go beyond forms of accessibility and inclusion enabled by technology. It should dismantle the widespread equation of digital inclusion with digital decolonisation, as well as the rhetoric of digital solutionism in CH, to overcome any possible ambiguity of digital decolonisation [53]. Instead, it should prioritise issues of control, power, and decision-making over technological choices, placing these in the hands of bearer communities in order to sustain the living and transformative nature of ICH. As several scholars argue, decolonising digital heritage entails discussing how digital systems are designed and by whom [54], through a structural rethinking of the ways in which knowledge is produced, organised, and disseminated through digital infrastructures—such as platforms and archives—often informed by Western digital ontologies [55], explicitly linking local agency and epistemic justice by design practice.

Here two anonymized cases are presented to exemplify and summarize the considerations drawn from the projects.

Project 1 claims the transformative role of technological advancement to foster collaboration among cultural sites, CCI, creative professions and citizens (extended relational dimension) for content co-creation (focused processual dimension) to create an inclusive cultural-educational ecosystem empowered by cutting-edge digital solutions. Anyway, in the pilots (as far as was possible to observe from the official online documents), accessibility and audience engagement are prevalent, in a quite passive performative dimension of participation, where active engagement is still framed as personalisation of visit and learning strategies. Content creation was led mainly by museum curators with users' needs managed through crowd sensors and tracking system in the cultural sites to detect also practices for disadvantaged or unrepresented individuals (in an extractive process not allowing autonomy nor creativity). Just in one site a more collaborative effort has been adopted (engaging experts, artists, creative professionals, and small and micro-enterprise, including the participation of young people and women). However, the policy brief report mentions that due to their low educational level, their contribution needed to be legitimated under a "governing body", an institutional entity that holds authority on content quality. Even with ethical consent and compliance respected, if it is not exactly tokenism, it certainly cannot be considered an example of distributed authority and transformative empowerment.

Project 2 claims inclusive and fair digitization and reuse of CH of minority communities (extended processual dimension) by their participation in the decision-making process (focused relational dimension). It advocates community-led governance, ownership and control for respectful, and ethically empowered practices. Anyway, the participatory workshops are not described in detail, and the minority communities appear to have a consultative role ("exploring their needs, opinions and desires") that according to Arnstein [56] is a degree of tokenism.

More detailed analysis of empirical data is undergoing, but as preliminary conclusion, within the research and innovation projects funded by the EC in the field of ICH that refer to the use of participatory processes, even within the frame of more ethical or sensitive positions, a decentering and decolonizing approach to participation does not emerge explicitly and consciously. There is a persistent use of the term that is sometimes superficial, sometimes rhetorical, and even a biased or distorting application of participation. Regarding the use of digital technologies for participation, few projects raised concerns on the way in which technology practices can create barriers for access and inclusion, but concepts such as digital decolonisation, digital pluralism, technodiversity [57, 58] are even not mentioned by the calls, and consequently overlooked by the projects. Therefore, inequalities in cultural participation persist and patterns of cultural participation remain socially and spatially divided in the EC [59] and as a matter of fact, the scope for participation is easily overstated and yet to be adequately substantiated.

5 LOOKING FOR GUIDING PRINCIPLES

At this stage of research progression, given the difficulty of finding out a significant number of projects applying truly decolonizing participatory processes (which in any case have always a contextual

dimension and are therefore partial and not easily replicable or scalable), it seemed more appropriate to hypothesize a set of guiding principles, which can act as a lens for the assessment and amplification of virtuous approaches, in an open-ended and non-prescriptive perspective.

The objective of this drafting is twofold: from one hand, to better focus the research to find concrete examples that can illustrate (even partially) the guiding principles (not only among EC funded projects, but in other regional or local funding and bottom-up initiatives too); on the other hand, to specify requirements and actions to set up pilots for practical experimentation in the field, in order to pass from the level of framing to the one of execution and actionability of the principles.

As starting point, the concept of intersectionality [60], that concerns the interaction between a plurality of differences and their context and positioning which defines systems of privilege, is posed as a reference background to defuse distorted logics of assimilationist and paternalistic inclusion in participation.

Then, some key concepts emerged from the review of the literature and of the projects have been selected as the more promising, and correlated to the dimensions of participation (see table 4)

Therefore, reframing the three dimensions of participation, in the light of the abovementioned concepts and the interdependencies of multiple actors and agencies in the CH ecosystem [61], we advocate for:

1. At the processual level of participation, distributing agencies in the whole process and phases. Participatory processes must structurally happen and inherently pertain (and not being "enabled") at all the CH value chain stages (also considering if using or not to using technologies, and which ones), generating a transformative impact of capacitation on the whole CH ecosystem itself.
2. At the relational level of participation, leveling power by sharing leadership. All the different typologies of actors should be interconnected and involved in shaping the whole process, by different ways of engaging and shared leadership of the design process.
3. At the performative level of participation, valuing impermanence and promoting adaptive endogenesis for transformation. Participatory design approaches should not be grounded in deterministic approaches and focused on predefined outcomes typical of the culture of planning and over-control of the future. Instead, it should value the autonomy and improvisational agility of the ICH ecosystem in continuously reshaping the directions of the design processes over time.

According to these principles, it is necessary to re-negotiate our human entrenched system of understanding right and emancipation (as something acquired and not given by other entities), fair exchange (as action and responsibilities built on uniqueness) and objectives (as something not predetermined nor exactly predetermined).

For this reason, to put these principles in practice requires a continuous attentive monitoring and self-analysis of the most potentially triggering and cumbersome processes in participatory

Table 4: Correlation among key concepts and dimensions of participation

Key concepts	from	Relevant for
Renewed Engagement	Digicher project	Processual and performative dimension
Pluriversal participation	Torretta et al. 2023	Processual and relational dimension
Empowered participation	Epic-We project; Culturati project	Performative dimension
Radical Participatory Design	Udoewa (2022)	Processual, relational and performative dimension

design for CH, but no detailed operational procedures can be conclusive or permanent, unless they possibly fall into prescriptive solutionism again colonizing. Anyway, a framework of practical implications and precautions, as well as of non-prescriptive assessment, is under development and will be presented in a future work, to better support our claim.

6 conclusion: limitation and future directions

In this exploratory paper we give evidence to the necessity of challenging the democratic claims of participation and PD in CH for a truly decolonising approach, by the critical analysis of literature in design journals and of research and innovation projects funded under the EC scheme. We advocate an ecosystem thinking and pluriverse approach to decolonise the participatory paradigm, proposing some guiding principles that disentangle participation on three levels (processual, relational and performative) and imply design sometimes is taking a step back, because only an intentional aware design practice can support alternative worlding.

The most relevant research limitations anyway are the limited list of journals considered for the literature review and the exclusion, from the research projects typologies, of projects not funded by competitive calls or smaller scale independent or applied research. Finally, some projects are still undergoing and official documents and data are not completed or available at the time of the study. These choices and factors could have generated some path dependencies in data and therefore in finding, assumptions and claims.

Further work can be conducted to deepen the focus and specificities of ICH as living agency and its correlation with transformative participation as well as its triangulation with digital technologies, that can be better explored in literature too.

Finally, it is crucial to experiment first-hand how to fully succeed in adopting a real and effective decolonizing approach in participation for CH, by concrete applicative projects. Some of the proposed principles (e.g. prioritizing autonomy and adaptive endogenesis of ICH, instead of predefined outcomes) could challenge EC project bureaucratic requirements (KPI, deliverables...) and be therefore difficult to set in practice in a rigid funding scheme structure. It's necessary to underline that this work constitutes a preliminary study for drafting a proposal for an application for EC funding and that the principles are at a developmental stage, therefore they could be further modified, refined, or even amended. Hopefully the project could offer the opportunity to improve and operationalize the principles, challenging in practice the privileged Western-centric perspective, not only at the level of the authors and researchers involved, but at the macro-level of the epistemic power of research policies too.

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From Researcher-led to Community-led: Role shifts in a Participatory Process within a Japanese Aging Community

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Figure 1: Pictures of the Flower Festival day. Left: Residents were looking at the booths selling small goods and cloth. Middle: Residents listen to the music performance. Right: Both older adults and children attend the flower crafting workshop hosted by researchers.

Abstract

Collaboration between researchers and community members is central to participatory design (PD). However, there remains a limited understanding of how leadership roles shift between these stakeholders over time. This paper examines how leadership evolved during a two-year PD process in a suburban Japanese aging community. The project began as a researcher-led effort to restore an abandoned flowerbed into a community garden, providing a space for social engagement. Subsequently, residents independently initiated and managed a community flower festival, a celebration intended to share the space with the wider public. In this phase, community stakeholders took primary responsibility for operations, while researchers provided only limited, task-specific support. Using a service-design lens, we trace how roles, dynamics, and resources were continually renegotiated. We identify the mechanisms that enabled this shift—specifically the progressive redistribution of tasks, responsibilities, and coordination—demonstrating how these changes yielded a durable sense of local ownership with minimal researcher centrality.

CCS Concepts

• **Human-centered computing** → **Empirical studies in collaborative and social computing.**

Keywords

Aging community, Participatory design, Role shift, Sense of ownership

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1 Introduction

Japan's rapidly aging demographics, projected to exceed 36% aged 65+ by 2045—underscore the need to cultivate supportive, engaging, and resilient communities that mitigate isolation and enhance everyday quality of life [37, 41]. Within HCI and CSCW, Participatory Design (PD) is widely used toward these aims [4, 5, 32], yet much PD work with older adults remains short-term and time-boxed, rarely outlasting the project window [28]. Also, in such work, researchers typically lead—initiating ideas, organizing meetings, and facilitating communication [9, 27]. In long-term, community-based projects with older adults, however, an important question is how researchers' roles might shift, and how ownership can transfer to community stakeholders so initiatives become sustainable over time.

This paper offers empirical evidence of this shift. Over a two-year participatory design project in a suburban Japanese aging community, researchers documented the transfer of leadership from the research team to community stakeholders through the co-creation of a community Flower Festival, featuring food and drinks, live music, and a flower-crafting workshop. The festival celebrated the



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blooms of a community garden co-established in 2023, which transformed an abandoned flowerbed into a vibrant shared space under the leadership of researchers. By December 2024, community stakeholders initiated the celebration and took charge of planning and execution, drafting budgets, recruiting performers, and producing posters, while researchers supported the effort by attending planning meetings, designing and facilitating the flower-crafting workshop, and providing on-site volunteer labor.

Framed through a service-design lens, this evolution can be understood as an iterative service in which roles, dynamics, and resources are continually renegotiated [38, 40]. The co-creation of the community garden and, later, the flower festival reconfigured who convenes, who decides, and who does the work. Seen this way, our findings foreground changing roles, dynamics, and the codification of handoffs through boundary objects, such as budgets, posters, schedules, and meeting notes.

Across iterations, researchers shift from initiating and facilitating to supporting by creating conditions, tools, and relationships that enable others to act, while residents move from invitees to stewards and organizers. This role shift creates a sense of ownership [12, 18] of the community residents and make it more sustainable without ongoing researcher involvement. By linking PD's concern with participation and ownership to service design's attention to role orchestration and institutionalization over time, we bridge our findings back to the field site and its longitudinal dynamics. This framing motivates our research questions:

- **RQ1:** How does an iterative participatory design process shift leadership between researchers and community stakeholders in a Japanese aging community?
- **RQ2:** What mechanisms enable such leadership handovers to become durable over time in participatory design with aging communities?

By answering those questions, this research contributes to an empirical account of how leadership redistributes from researcher-led to community-led coordination, for long-term relational engagement.

2 Related Works

2.1 Participatory Design with Older Adults

Recent HCI and CSCW studies indicate that PD activities are often treated as discrete episodes with little attention to what follows, limiting mutual learning, empowerment, and durable practice change [14, 30]. In such formats, older adults may contribute ideas without feeling ownership of the outcomes, sometimes designing for other generic users rather than themselves [21, 44]. In contrast, longitudinal engagements create room for trust, reciprocity, and situated expertise to develop, enabling older adults to act as co-designers rather than being occasional informants [15, 24, 25]. Long-term efforts have been shown to yield unanticipated but lasting social practices that participants sustain beyond the project window [10, 28]. Reflecting a growing consensus, scholars argue that extended collaboration better supports agency and aging-in-place goals and produces outcomes that remain embedded in everyday contexts [22, 26]. Our study aligns with this trajectory and focuses on how researcher roles can shift over time to enable resident leadership.

2.2 Sense of Collective Ownership in Community-Based Design

To achieve the sustained engagements in the aging communities, a central aim of community-based PD is cultivating collective ownership over both the process and its outcomes: distributing authorship, control, and responsibility beyond external experts [3, 11, 16]. One strand emphasizes co-creation of boundary objects (e.g., maps, storyboards, prototypes) that let diverse stakeholders negotiate meanings and see their contributions materially reflected, reinforcing the sense that “we designed this together” [7, 13, 29, 33, 39]. Another strand frames ownership through infrastructuring: designing socio-technical relations, routines, and platforms that communities can appropriate and evolve over time, shifting ownership from a finished artifact to a capacity to shape future attachments and uses [17, 19, 31]. In practice, such ownership is sustained through shared decision-making protocols, open governance of artifacts, and “design things” that periodically gather stakeholders to realign purpose and direction. Crucially, genuine ownership cannot be engineered through token consultation; it emerges through power-sharing, sustained dialogue, and accountability to community priorities [6, 8]. Building on this literature, our exploratory paper examines the role work that mediated through artifacts, routines, and public moments, showing how a researcher's stance as a close outsider supported a handover from researcher-led facilitation to resident-led governance.

3 Methodology

3.1 Research Setting

This study was conducted in Japan, within a suburban Tokyo housing complex built in the 1970s. The *Yonamoto Housing Complex* comprises roughly 3,000 households, with about 44% of residents aged 65 and over. As the nearest commercial area is a 20-minute bus ride away, many daily needs and social encounters occur locally. In response, a network of neighborhood organizations has emerged to reduce travel burdens, sustain social connections, and support residents' well-being.

Showing in Table 1, four key organizations were central to residents' daily life and to this collaboration—two led by residents and two external. Together, these stakeholders form a web of social, institutional, and material supports that made sustained participatory design possible and shaped how responsibility and leadership were distributed over time.

Beyond these local stakeholders, the research team also played a crucial role. Since 2019, the researchers have cultivated strong, trust-based relationships with the four key organizations and their leaders. Before the launch of the gardening initiative, one researcher spent three months volunteering—primarily by assisting with the Community Center's café sessions. This period of immersion fostered a deep understanding of the local context and built rapport with residents.

The project site was an abandoned garden situated in a central, high-traffic area of the Yonamoto housing complex. When researchers inquired about the site's history, residents revealed it had been abandoned for more than five years. Despite its prominence, no one had taken the initiative to restore it. Residents explained

Table 1: Key Stakeholder Organizations in the *Yonamoto Housing Complex*

Organization	Type	Composition	Roles
Community Center(Hokkori)	Resident-led	Coordinated by 2 older women with 10 volunteers (70s–80s).	Acts as a hub for informal support and low-threshold social interaction (cafés, exercise, cooking).
Community Association(Flower Society)	Resident-led	12 members (50s–80s).	Handles formal governance, facility maintenance, and ecological care of green spaces.
Community Care Center	Corporation	10 professionals, including social workers, nurses, and welfare specialists.	Provides health consultations, daily-life assistance, and referrals to medical resources.
Urban Renaissance Agency	Corporation	Local branch staff of a larger corporate entity.	Oversees facility logistics, issues activity permissions, ensures safety compliance, and allocates small budgets.
Researchers	Institution	2 members	Participated in community events, conduct workshops and research projects.

that revitalizing the garden was perceived as a risk to delicate stakeholder relationships and required significant resources, both financial and human, that were difficult to mobilize.

3.2 Data Collection and Analysis

We adopted a longitudinal ethnographic approach that combined participant observation, shadowing, and informal interviews, planning meetings, and community events. Throughout these activities, we documented interactions through photographs, video, audio recordings, and community-generated artifacts such as meeting notes and poster drafts. Following each visit, the researchers held collaborative debrief sessions [35], reviewing field notes and reflecting on how our presence—familiar yet still outside collaborators—shaped emerging relationships and group dynamics.

For analysis, we reviewed the field notes, photos, videos, and community-generated artifacts. Grounding our interpretation in the local context, we employed thematic analysis [36], where we coded instances of role-shifting to identify the emergence of residents' sense of ownership.

4 The shift from an abandoned garden to a festival

4.1 Researchers in the lead: Co-creating the Community Gardening Program

This paper extends previous work [43], which focused on the role of ICT tools during the co-creation process. The first phase of this longitudinal study focused on co-initiating a community garden (refer to 2. The idea emerged organically during a casual talk with a member of the *Community Center*, who suggested transforming a long-abandoned flowerbed on the housing complex grounds into a communal space. Subsequent conversations with residents confirmed a strong local interest in gardening and flowers.

The researchers and *Community Center* members jointly approached the *Community Association* and the *Community Care Center* to align support around a shared vision. With stakeholder alignment taking shape, attention turned to planning and formal approval. Residents and the research team co-developed a proposal to request land-use permission from the *Urban Renaissance Agency*. Over several weeks, researchers organized participatory planning meetings at the *Community Center* with members of the *Community Association's* subgroup, the *Flower Society*. Throughout, community stakeholders acted as co-designers, contributing local knowledge and preferences, while researchers helped structure and articulate these ideas in the written proposal. Decision-making was collaborative and often informal, with consensus forming through side conversations and gently facilitated discussion.

This process culminated in formal approval and the launch of the community garden in June 2023. Once established, the garden quickly became a popular gathering place. Residents now frequently use the space to sit and chat with friends, check the flowers, and do morning exercises around the garden.

Throughout this phase, the research team's role was to gather residents' voices, design the formal proposal, and communicate with the *Urban Renaissance Agency* on behalf of the residents. Researchers acted as the formal proposers, leading an initiative to integrate resources within the community. Complementing this, the residents provided local context and gardening expertise, ensuring the plan was culturally and ecologically appropriate for the community.

4.2 Community in the Lead: Co-creating the Community Flower Festival

Building on the garden work, residents initiated a Community Flower Festival to celebrate the space and re-energize participation (see Table 2). In April 2024, the *Community Center* invited



Figure 2: Left: The flowerbed before the community gardening program in March 2023; Right: After the co-creation in June 2023.

the researchers to its cherry-blossom (*sakura*) gathering, and during subsequent visits, residents repeatedly expressed interest in an event centered on the garden. By December 2024, this interest crystallized: the head of the *Flower Society* convened a planning group, and on December 14, 2024, a general meeting was held to brainstorm a “flower party.” Residents contributed enthusiastically—some advocated serving food and drinks; others proposed live music. Researchers suggested a pipe-cleaner flower workshop, which had proven accessible across ages. Practical considerations followed: date and time, permissions from the *Urban Renaissance Agency*, and coordination roles.

In February 2025, four community leaders held two planning sessions. Although researchers could not attend due to scheduling conflicts, leaders shared SMS updates and later circulated detailed summaries for feedback. During the first session, the name shifted from “flower party” to “Flower Festival”; the menu was agreed upon and quantities calculated; familiar local musicians were contacted; tables and chairs were inventoried; and a formal grounds-use request was submitted to the *Urban Renaissance Agency*. At the second session, the *Flower Society* invited the *Community Center* to support organization and logistics. The group agreed to produce a poster, broaden participation with stalls selling clothing, small goods, and artwork by people with disabilities, and add additional performances. To raise awareness of the garden and nearby beds, leaders planned to distribute “flower walking maps” co-designed with the researchers, highlighting flowerbeds maintained by the *Flower Society* and suggested neighborhood routes.

Meanwhile, researchers designed the pipe-cleaner flower crafting workshop, provided four flower patterns that were easy to craft—three intentionally simple and one slightly more complex. The researchers proposed a pilot crafting workshop, and residents agreed that *Flower Society* members would pre-make bouquet pieces, positioning these members as co-facilitators during the festival.

At the March 9 general meeting (refer to 3, the four leaders presented the finalized plan, summarized February decisions, and opened the floor for feedback. Volunteer recruitment began for

setup, moving furniture, printing posters, preparing food and drinks, and day-of logistics. Afterward, the pipe-cleaner flower crafting workshop ran with ten core members under researcher’s facilitation. Residents began crafting immediately, asking for help as needed; as they mastered steps, they taught neighbors. One woman reflected, “*At first you don’t see the shape—just like planting a seed—but it slowly comes to life, and when it blooms you feel proud.*” The session produced a bouquet of pipe-cleaner flowers and previewed the cooperative spirit on which the festival would rely.

4.3 The Flower Festival Day

The festival took place on April 12, 2025 (refer to 1). It began early in the morning, with researchers assisting *Flower Society* members in setting up the site. The event opened with musical performances, while pop-up stalls surrounding the stage offered Japanese snacks. Nearby, a *Flower Society* leader served *amazake* (sweet rice wine) and coffee. Volunteers distributed flower-walking maps to guide attendees through the garden beds. Simultaneously, the *Community Care Center* and *Community Center* hosted a booth selling artwork created by people with disabilities, alongside small goods and clothing.

During the festival, researchers stayed at the crafting corner, where they prepared four simple pipe-cleaner patterns, laminated instructions, and finished samples. The session quickly took on a life of its own: three *Flower Society* members coached participants, while one enthusiastic volunteer began handing out extra blossoms near the stage, remarking, “*Everyone loves these little blossoms—let’s make enough for all our guests.*” Researchers kept crafting flowers throughout the event to ensure the *Flower Society* had a steady supply to distribute to other residents. While facilitating the workshop, researchers also took moments to join the residents in enjoying the music and refreshments, further embedding themselves in the communal atmosphere.

Throughout the day, leadership was visibly distributed. Community leaders coordinated timing, queues, and refills. Researchers

Table 2: Evolution of the Flower Festival: Key Decisions, Activities, and Participation

Date (M/D/Y)	Event Type	Participants	Key Decisions and Activities
05/18/2023	Garden Implementation	13 residents, 2 researchers	Initial planting and watering; establishing program goals.
04/06/2024	Cherry Blossom (<i>Sakura</i>) Gathering	19 residents, 1 researcher	Social interaction (singing, dining); informal discussion of garden-centered events.
12/14/2024	<i>Flower Society</i> General Meeting	8 residents, 1 researcher	Brainstorming the “flower party”: venue, timing, and preliminary activities.
02/08/2025	Leaders’ Planning Session I	4 residents (No researcher)	Decision to expand to a “Flower Festival”; budgeting and supply procurement planning.
02/22/2025	Leaders’ Planning Session II	4 residents (No researcher)	Finalizing activity list; designing the festival poster.
02/26/2025	Coordination Meeting	1 leader, 1 researcher	Aligning the crafting workshop proposal with logistical setup.
03/09/2025	<i>Flower Society</i> General Meeting	17 residents, 1 researcher	Announcing the finalized plan; volunteer recruitment for setup and outreach.
03/09/2025	Pilot Crafting Workshop	14 residents, 1 researcher, 3 facilitators	Testing flower patterns; recruiting and training residents as workshop co-facilitators.
04/02/2025	On-site Preparation	2 residents, 1 researcher	Finalizing signage and distributing promotional materials.
04/12/2025	Flower Festival Day	Volunteers and visitors	Musical performances, food stalls, flower-walking tours, and crafting workshops.



Figure 3: Left: The *Flower Society* General meeting (March 2025) announcing the details around the flower festival; Right: After the meeting, members tried the flower crafting hosted by the researchers

contributed in deliberately supportive ways, facilitating the crafting corner and providing on-site volunteer labor, while decision-making and ownership rested with residents. In effect, the festival made the role shift tangible: what began under researcher leadership had become a community-led celebration, with researchers as trusted, close outsiders sustaining momentum without directing it.

5 Findings

5.1 Roles: From Central Facilitator to “Close Outsider”

The leadership role shifted decisively from the research team to the community between the co-creation of the garden and the execution of the festival (See table 3. Early in the project, the researcher

Table 3: The role of Stakeholders in gardening and the festival

Organization	Role in Community Gardening	Role in the Flower Festival
Community Center(Hokkori)	Acted as the initial hub; provided local context, labor resources, and meeting space for planning.	Supported logistics and organization; co-hosted the booth and provide food and drinks.
Community Association(Flower Society)	Provided gardening expertise; co-developed the land-use proposal and maintained flowerbeds.	Led the planning group; coordinated musicians and equipment; co-facilitated the crafting workshop.
Community Care Center	Aligned organizational support for the vision; connected social welfare goals to the garden.	Co-hosted the booth selling artwork created by people with disabilities and small goods.
Urban Renaissance Agency	Granted formal land-use permissions; ensured safety compliance and oversight of the grounds.	Approved formal grounds-use requests; oversaw facility logistics and safety protocols.
Researchers	Acted as formal proposers and leads; designed the proposal and managed communication with stakeholders.	Served as supporter; designed craft patterns and provided supportive volunteer labor.

acted as the central organizer: brokering permissions with the *Urban Renaissance Agency*, drafting proposals, organizing meetings, and circulating minutes. Residents contributed ideas and labor but viewed the researcher as the primary agent to the success of the project.

Over time, this coordination shifted outward through accumulated micro-handoffs. Residents formed a community gardening committee, initiated planning sessions, and sent meeting invitations themselves. By the festival phase, the researcher's role had transitioned to that of a supporter with bounded contributions—designing the poster and facilitating the flower crafting workshop—while deliberately declining central coordination. On the festival day, residents emceed, staffed stalls, and solved shortages, while the researcher circulated as a helper rather than a director.

Crucially, this shift was codified through artifacts. Meeting schedules began identifying resident stage leads, and minutes recorded who leads and decides. As these artifacts circulated, requests to the researcher became specific and limited, signaling that residents now held the center of action. This role reversal demonstrated a maturing collaboration: the sustained engagement fostered the confidence for residents to assume responsibility, allowing the researcher to move from a driver to a trusted, accessible resource.

5.2 Dynamics: Navigating Authority through Harmony

As roles changed, the dynamics of decision-making and accountability also shifted. In the early phase, decision rights were consolidated; the researcher validated consensus and held the institutional ties. Later, decision rights were intentionally distributed to resident leads, recorded in minutes that explicitly asked “who leads/does/decides.”

This dynamic was sustained by a growing sense of reciprocity. It was not only the research team extending help; the community reciprocated in kind. For example, on occasions when the lead researcher was unable to attend a festival planning meeting, community leaders took the initiative to share meeting minutes, documents, and a personal recap afterward. This considerate gesture

demonstrated that the residents valued the researcher's participation enough to ensure they stayed informed, treating the researcher not as a director who had to be there, but as a partner they wanted to include.

Culturally, these dynamics required navigating authority with harmony. Decision-making moved less through debate than through timing and tacit acknowledgment. For instance, the researcher learned to use artifacts, like posters naming resident leads, to legitimize authority without requiring residents to make uncomfortable overt claims to power. Pauses in meetings allowed consensus to surface naturally, ensuring that authority consolidated locally while keeping the researcher proximate but non-central.

5.3 Resources: The Accumulation of Relationships

The flow of resources, including material, informational, and relational, underwent a transformation. At the outset, resource flows were linear, running primarily through the researcher who sourced seedlings and tools. As leadership redistributed, resource flows pluralized: residents managed budget sheets, recruited performers via their own networks, and sourced supplies through community partners.

However, the most critical resource to emerge was relational trust, which participants described as a “friendly and trustworthy relationship.” This was not built solely through design workshops, but through the accumulation of shared life moments, working in the garden, sharing food, and attending community events.

This relational depth functioned as a buffer during the project's transition. Residents felt comfortable sharing homemade food and produce with the researchers, a culturally significant sign of hospitality, and they felt safe asking researchers for help. In a context where self-reliance is valued, the act of soliciting specific support (e.g., designing a map) signaled that the researcher was no longer an outsider but a trusted companion inside the community's circle of mutual aid.

6 Discussion

6.1 Collective Ownership as a Basis for Sustainable Community Development

Our findings illustrate that collective ownership is not an automatic outcome of participation, but an evolving state achieved through specific mechanisms of coordination. We argue that the shift from researcher-dependency to community-ownership was stabilized through two intertwined mechanisms emphasized in PD: the co-creation of boundary objects that materialized contribution and credit [7, 13], and infrastructuring practices that converted one-off outputs into reusable routines [1, 3, 11, 17, 19, 29, 31, 39].

In line with critiques of participation [6, 8, 18], genuine ownership here was not manufactured via token consultation but earned through power-sharing and routine co-governance that physically relocated decision rights to residents. Viewed through a service-design lens, the project operated as an iterative service in which roles, decision rights, and resource flows were repeatedly re-orchestrated and gradually institutionalized [38, 40]. By treating the engagement not as a project with a fixed end, but as a service evolving toward autonomy, the researchers supported continuity and local sustainability over time.

6.2 Cultural Context: Timing, Tone, and Role Change

The redistribution of leadership unfolded within a Japanese aging-community context that values *wa* (harmony) and *enryo* (restraint). These cultural norms shaped how authority transferred and when the researcher stepped back. Rather than open debate—which risks conflict—decisions often solidified through pacing and acknowledgment: pauses allowed consensus to surface without face loss, while listing resident contact points on posters authorized leadership without demanding overt self-assertion [2, 20, 23, 34, 42].

This highlights a critical nuance for PD in high-context cultures: effective handover requires not just structural changes, but affective attunement. Everyday practices of reliability and reciprocal modesty deepened trust and lowered the social cost of asking for involvement, allowing residents to step into leadership roles without disrupting the community's social connection.

7 Conclusion

This exploratory paper has examined how leadership shifted over a two-year PD engagement in a Japanese aging community—from researcher-led facilitation to resident-led governance—yielding a durable sense of ownership that reduced dependence on researchers and sustained activity beyond the project window.

Beyond the specific context of Japan, the core lesson is one of choreography rather than cultural exceptionalism: effective PD requires tuning the pace and tone of role change to local communicative norms. Where harmony and restraint prevail, leadership should be legitimized through public crediting and repeatable routines; where direct deliberation is the norm, mechanisms such as explicit role charters or vote-based mandates may be more appropriate. Across contexts, sustainable ownership hinges on physically relocating decision rights and everyday coordination to community

actors, and making that relocation visible and repeatable through artifacts and rhythms suited to the setting.

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Designing Dialogues: Dialogical Encounters Between Ancestral and Biomedical Worlds in Colombia

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Abstract

This paper explores *Entrever con*, a podcast co-created by the *Kilombo Yumma* community of Afro-Colombian midwives and the *Universidad de los Andes*' Design Research Group, as a case study in participatory design fostering dialogue, inclusion, and resilience. *Kilombos*, urban ethnomedical centers integrating ancestral and biomedical practices, serve marginalized populations displaced by conflict, creating spaces for cultural continuity, healing, and collective reflection. Through a hybrid methodology combining critical-reflexive and systemic design, the project centers community voices, epistemic sovereignty, and dialogical relationality, enabling marginalized knowledge holders to shape narratives, authorship, and decision-making. The podcast's iterative co-creation process leveraged digital technologies to mediate plural voices, fostering intercultural understanding and trust while addressing structural inequities. Based on complexity theory, this study highlights how participatory design can transform historical asymmetries into generative encounters, supporting long-term systemic and social transformations. *Entrever con* demonstrates how design can act as a catalyst for mutual recognition and co-existence, showing that inclusion, dialogue, and community-led processes are foundational for resilient and equitable social innovation.

CCS Concepts

- **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design; Interaction design; Interaction design process and methods; User centered design;
- **Social and professional topics** → User characteristics; Cultural characteristics.

Keywords

Participatory and Systemic design, Afro-Colombian midwifery, Epistemic sovereignty, Podcast

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1 INTRODUCTION

Kilombo is an African word signifying resilience, pride, collective force, and the breaking away from imposed structures [1, 2]. In Bogotá, Colombia, *Kilombos* are fourteen ethnomedical units founded by displaced Afro-Colombian midwives, healers, and community leaders who migrated during the 1990s civil war. These organizations integrate ancestral and biomedical practices to serve Afro-Colombian populations living in vulnerable conditions and facing structural inequality [3]. They provide prenatal services, early childhood care, and chronic disease screenings, while complementing these with spiritual and collective practices such as rituals, chantings, and community healing activities [3]. Thus, *Kilombos* emerged as centers of healing, reconciliation, and cultural transformation.

Some *Kilombos* formally belong to the national healthcare system, but midwifery and other ancestral practices have not been fully recognized as equivalent to Western medicine. This lack of parity reveals deeper structural asymmetries. Public health authorities reinforce this by collecting data through surveillance systems that privilege biomedical indicators while systematically excluding the language, outcomes, and epistemic frameworks of Afro-Colombian ancestral health [4]. As a result, these practices often remain invisible within official healthcare metrics, undermining their legitimacy and sustainability.

In response to these challenges, *Kilombo Yumma*, referred to here as *Kilombo*, developed a mobile app supported by an academic grant [5]. This app aims to strengthen data collection while promoting data plurality and sovereignty [5]. Building on this experience, the partnership between academia and the *Kilombo* expanded. *Kilombo* launched the podcast *Entrever con* as a platform for participatory conversations between ancestral and Western health voices [6]. This study uses *Entrever con* to explore how participatory and systemic design can foster inclusion and recognize



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different ways of knowing. The podcast's goal was to increase visibility and promote intercultural understanding, as well as the recognition of Afro-Colombian health knowledge. Jointly led by the *Universidad de los Andes*' Design Research Group (*'Parir el Bien-estar, Criar Comunidad'*) and *Kilombo* leaders, this project made us ask ourselves: how can participatory and systemic design enable visibility and recognition between Afro-Colombian ancestral midwifery and Western medical voices that have historically remained disconnected or in tension, while fostering spaces for collective reflection on design's role in social inclusion?

The main contribution of this paper is to examine the role of design as an evolving discipline capable of supporting open-ended processes, such as embracing plurality in women's health and the inclusion of complementary and integrative approaches to care.

1.1 Positionality: Designing from within the Relationship

Kilombo's positionality is dual: deeply rooted in its ancestral identity yet open to exchange. For the *matronas* and midwives, academia represents an external sphere to be engaged critically, with clear boundaries that protect their identity and epistemic autonomy. Collaboration, therefore, is not an act of assimilation but of dialogue between distinct worlds of knowing.

From the Design Team's perspective, this collaboration became an opportunity to rethink academic research with communities. Unlike the social sciences, design is not bound by the imperative to explain phenomena but by the impulse to explore and reveal possibilities. This openness positions design as a mediating practice: structuring relationships, nurturing dialogue, and enabling shared discovery. The process sought to co-create value from and for the community, positioning design as a tool for producing artifacts and as a platform for generating relationships grounded in reciprocity and curiosity.

1.2 Theoretical Lens

Given the historical marginalization of Afro-Colombian medical practices, complexity theory, including the dialogical principle, offers a crucial framework. These approaches allow us to understand issues of representation not as isolated socio-economic problems but as systemic phenomena rooted in relational dynamics, diversity, and the politics of knowledge.

Complexity theory emphasizes relationality and the dynamic interconnections among elements, rather than isolating components for analysis. Rather than viewing organizations, societies, or knowledge systems as fixed structures, the theory foregrounds diversity, co-evolution, and emergence as drivers of transformation [7]. Understanding systemic behavior thus depends on tracing how relationships unfold, rather than controlling discrete parts. This approach makes complexity theory particularly suited to capture the adaptability of living systems, such as *Kilombo*'s evolving ecosystem of digital and communal practices embodied in the app and the podcast.

An important insight from complexity theory is that diversity and antagonism create new possibilities. Morin's [8] dialogical principle holds that systems thrive when opposing but complementary forces coexist. Instead of seeking consensus, dialogical

thinking sees friction as a way to develop shared understanding. Midgley [9] and Bakhtin [10] also view dialogue as essential for participation, where different voices interact, challenge each other, and create meaning together. Participation becomes co-agency: the joint ability to shape outcomes through negotiation rather than unilateral action.

Relationships in these systems rely on beliefs, reason, and emotion working together. When these aspects are acknowledged and balanced, they encourage reflection, empathy, and learning as a group. If power imbalances and asymmetries take over, dialogue can break down into a monologue, suppressing difference and obstructing transformation [10].

Kilombo's podcast embodies this dialogical and systemic ethos. As a space where diverse epistemologies—ancestral, medical, ecological, and digital—converge, the podcast becomes more than a storytelling platform: it operates as a living system for peacebuilding. Through dialogue, it nurtures collective awareness and relational repair, allowing silenced or marginalized voices to re-enter public discourse as legitimate sources of knowledge.

By following complexity and dialogical principles, the podcast transforms antagonism into constructive participation, generating new forms of relational agency among healers, technologists, and community members. The podcast encourages listening as a political act and dialogue as a way to reconcile differences, an evolving process in which difference becomes the ground for mutual recognition. Through this process, *Entrever con* demonstrates how systemic design can weave epistemic justice, cultural continuity, and peace into a single narrative fabric.

2 METHODOLOGY

This project applied a hybrid methodological framework that combined critical reflexive design [11] and systemic design research [12], both grounded in dialogical relationality as the structuring principle, shown in Figure 1. This combination enabled the process to privilege dialogue, collective agency, and situated understanding while maintaining a practical orientation toward the co-production of the *Entrever con* podcast.

Critical reflexive design [11] shaped the project's stance toward uncertainty and emergence, emphasizing reflection-in-action and the continuous negotiation of meaning among participants. It framed design as an open-ended process that questions its own assumptions and embraces multivoicedness. Within this framework, the women of *Kilombo* were recognized not as informants but as co-authors. Through narrative inquiry—stories, testimonies, and collective discussions—the project engaged Afro-Colombian ancestral medicine as a legitimate epistemic system, highlighting orality as both a research method and a design strategy.

In turn, systemic design research [12, 13] provided a structure to navigate the project's social, technological, and cultural complexity. This approach integrates systems thinking and design practice to address multi-stakeholder challenges. The podcast was thus conceived as a sociotechnical system, a communicative infrastructure connecting ancestral and Western medical perspectives. Following Jones's exploratory, formative, and evaluative phases, the process evolved through iterative cycles that expanded system boundaries, revealed tensions, and fostered inclusive decision-making.



Figure 1: Conceptual approach visualization to the methodology and the context of interest.

The project unfolded through four iterative design thinking phases (empathizing, defining, ideating, and prototyping) [14], reinterpreted through the principles of dialogical relationality [13], visualized in Figure 2 purpose-finding, boundary framing, idealization, requisite variety, and self-organization.

- **Purpose-Finding:** Passive observation in Kilombo’s facilities allowed the design team to immerse themselves in the community’s daily practices and social dynamics. Semi-structured interviews complemented this process, gathering personal narratives from the Kilombo women and their visions for the collaboration.
- **Boundary Framing:** This phase clarified expectations, needs, and limits of the partnership. Through collective reflection, participants identified the podcast as a tool to amplify Afro-Colombian health practices while safeguarding ancestral knowledge. These insights outlined how the community envisioned its future and how design could help materialize that vision.
- **Idealization:** Co-creation workshops guided the development of the podcast’s purpose, concept, and conversational dynamics. Its visual and auditory identity emerged through collaborative selection of sounds, colors, and textures that represented Kilombo’s essence.

- **Requisite Variety and Self-Organization:** The podcast’s production evolved through iterative recording and editing sessions. The inclusion of diverse guests—traditional midwives, medical doctors, and scholars—ensured requisite variety and encouraged self-organization, as the Kilombo team gradually assumed autonomy over production and curation.

2.1 Ethical approval

The Faculty of Architecture and Design Research Ethics Committee at *Universidad de los Andes* approved this study (Acta No. 003, Session May 7, 2024). All participants provided informed consent to join the project and appear in the podcast episodes. Their autonomy was respected throughout, with particular care to protect community agency and confidentiality.

3 RESULTS

The results emerged through a co-creation process guided by systemic design research principles, translated into concrete practices during the collaboration between the *Kilombo* community and the Design Research Group. Each stage corresponded to a dimension of dialogical relationality through which the podcast was collectively shaped and produced. The results include insights and quotes from



Figure 2: Methodology visualization with four iterative design thinking phases mixed with the principles of dialogical relationality.

Camila Villegas Mosquera, representing the Kilombo community voice.

3.1 Purpose-Finding: Setting Common Ground

This phase defined a shared purpose: to create a platform preserving and amplifying Afro-Colombian ancestral medicine through orality, using the podcast as a culturally resonant format that respected community rules on knowledge circulation.

3.1.1 Horizontal and Symmetrical Relationships: The early process confirmed the importance of horizontal and symmetrical relations between academic and community participants. Rather than extractive research, the collaboration unfolded as dialogical exchange grounded in trust and reciprocity. Previous collaborations enabled mutual recognition and collective definition of intentions, methods, and outcomes. The result was not top-down knowledge transfer but a co-created framework that valued diverse epistemic positions as equally valid.

3.1.2 Orality as a legitimate source of knowledge: Recognizing orality as a legitimate epistemic practice was essential. Within the *Kilombo*, oral transmission operates as pedagogy and protection, ensuring knowledge circulates responsibly within trusted relationships. By centering orality instead of written documentation, the collaboration validated storytelling as research, challenging academic hierarchies and positioning oral practice as the project's foundation.

3.1.3 No translation needed: A key outcome was the decision to let the community speak without academic mediation. The podcast became a space for members to voice narratives in their own rhythm and tone. Rather than filtering through institutional frameworks, authenticity and cultural fidelity guided the process, with ethical agreements on authorship, representation, and the right to silence.

For some knowledge-keepers like Abuela Pilar and Julissa, participation was meaningful because they could speak without correction: *“They liked that they were listened to and not judged.”* Camila added, *“Abuela Pilar will not write an article in English, and if she did, she would have to change her language. What we say cannot always be translated; language has a sociocultural dimension.”*

3.2 Boundary Framing: Negotiating Roles and Responsibilities

Once the purpose was defined, dialogue sessions and focus groups established roles, communication channels, and decision-making structures. *Kilombo* members, guided by Camila, retained narrative authority, consulting elders when needed, while the design team acted as facilitators responsible for research, technical development, and institutional coordination.

This phase exposed epistemic tensions: how much could be shared, in what form, and under whose voice. Negotiating these boundaries required balancing visibility with self-protection: making epistemic safety a precondition for genuine participation and trust.

3.2.1 Team roles and work dynamics. Roles were adapted to each actor's rhythms. The community needed time to validate decisions collectively, while the design team managed institutional procedures and logistics. Production followed the community's temporality, not the institution's. Responsibilities were distributed by expertise and relational accountability rather than hierarchy.

3.2.2 Podcast concept. The podcast concept emerged organically from the community's needs rather than pre-defined research goals. Early conversations revealed a desire to celebrate Afro-Colombian midwifery (*partería*) as cultural, spiritual, and social knowledge. Each episode focused on a community-defined theme:

- History of midwifery in Colombia

- Midwifery and the healthcare system
- Afro-feminist perspectives
- Creation of urban *Kilombos* in Bogotá
- Contemporary views on birth and pregnancy
- Transmission to new generations

The goal was not to “document” but to amplify living knowledge. The podcast thus became a narrative infrastructure for intergenerational dialogue and recognition — an artifact from the *Kilombo* and for the *Kilombo*.

3.2.3 Rules of the game, spaces designed with intention. From the beginning, implicit and explicit agreements guided collaboration. Some community members expressed reluctance due to past experiences of appropriation. These emotions—fear, distrust, protection—highlighted the need to design for epistemic safety as a design condition, not as a by-product. Participation came to mean not only inclusion but also the right to say no, pause, or withdraw unsafe content. Protective mechanisms were embedded in the conversations:

- Listen and question with empathy.
- Speak your truth without imposing it.
- Give space and manage tension calmly.

These boundaries fostered trust and respect, allowing design to operate as a mediation between visibility and care.

3.3 Idealization: Designing the Podcast Identity

Ideation unfolded through parallel dialogues between Camila and the Design Team and through community workshops defining conceptual and aesthetic foundations (Figure 3). Using sounds, cards, and material references, participants connected the podcast’s atmosphere to the colors, textures, and sounds of the territory, shaping both its identity and shared vision.

3.3.1 Podcast Format: Conversational vs. Documentary. The *Kilombo* envisioned a podcast to express their worldview and safeguard ancestral wisdom amid generational loss. “So many mayoras have passed away, taking their knowledge with them. Now we must create strategies to pass it on,” they said.

Initially, they proposed a documentary format to highlight the historical role of ancestral medicine. However, given the podcast’s public nature, this approach conflicted with the need to protect sacred knowledge. The team thus reframed it as a series of dialogues between *Kilombo* members and guests from academia and medicine. This conversational format allowed the community to speak publicly while retaining control over what could be shared, a bridge between visibility and protection.

3.3.2 Co-Creation Tools and Shared Futures. Workshops aligned the podcast’s identity with *Kilombo*’s worldview. “Ancestral knowledge is part of nature; it cannot be detached from it,” said Camila Villegas. Through card sorting design tools, participants translated abstract ideas into sound and image, evoking their territories and ensuring cultural fidelity through dialogue and consensus. For the designers, these were spaces of listening and translation where symbolic meanings took visual and auditory form, minimizing cultural misrepresentation and ensuring fidelity to the community’s sensibilities.



Figure 3: Layout of images of one of the cocreation sessions with the *Kilombo* members.

3.3.3 “Not to Design” as a method. Podcast themes arose from *Kilombo*’s own priorities. To preserve spontaneity, the team avoided scripts and predefined questions, letting dialogue flow from participants’ curiosity. Recognizing their catalytic role, designers practiced designing by not designing, revealing how minimal intervention fosters trust, authenticity, and coexistence of consensus and difference.

3.4 Requisite Variety: Assembling Plural Voices

Guest selection followed a dual approach: *Kilombo* invited ancestral voices (midwives, *sabedoras*, and Afro leaders) while the Design Team engaged medical doctors, anthropologists, and doulas. These encounters enacted requisite variety, turning the podcast into a plural space where heterogeneous knowledge could meet (Figure 4).

3.4.1 The Illusion of Consensus. Guests shared ethical orientations around maternal autonomy and dignified birth, fostering apparent symmetry. Yet, as Camila later observed, “Many of the women did not say what they really wanted to say. Probably because there was a camera in front of them.”

While the design team perceived the encounters as spaces of convergence and “more consensus than difference,” Camila offered a more nuanced perspective, noting that some women expressed their disagreements only after the recordings, when the camera was no longer present. This revealed that the podcast space, though experienced as emotionally safe and symmetrical— “We never felt inferior,” the *Kilombo* reflected— had prioritized wellbeing over the open expression of difference. The experience thus exposed the subtle tension between care and dissent, suggesting that future designs should intentionally foster conditions where both can coexist.

3.5 Prototyping: Dialogical Design in Practice

Prototyping became a relational learning process where design acted as both mediation and dialogue. Rather than testing a product, the process itself tested relationships—co-designing knowledge and trust. Through collective sessions, the podcast evolved into a living interface for epistemic encounters.



Figure 4: Guests of episode 5. Martha (traditional midwife), Amapola (professional midwife), Camila (traditional midwife apprentice) and Alejandra (obstetrician and gynecologist)

The tangible results of *Entrever con* are twofold: a podcast preserving ancestral health knowledge and a set of relational structures redefining how design, community, and academia interact. The project became a methodological prototype for designing with rather than for, turning each encounter into a negotiation between languages, knowledge, and territories.

3.5.1 Dialogical Symmetry: Horizontal encounters. Horizontality was not only about decision-making but also creating conditions where all voices were valued. It required creating material and symbolic conditions for all voices to be expressed and valued. Camila noted, “*The dialogue felt symmetrical.*” For *Kilombo*, it meant speaking freely; for designers, it meant relinquishing control and adapting to community rhythms. Still, as Camila observed, “*It was inside Universidad de los Andes, and that already conveys dynamics that shape behavior.*” Symmetry, therefore, did not emerge naturally but was consciously co-designed and continuously sustained through the collective effort to distribute agency and build genuine collaboration [15].

3.5.2 Validate by confronting prejudices. The podcast became a space to challenge preconceptions from both institutional medicine and Afro-Colombian communities, fostering reflection and shared values around maternal and infant well-being. Collaboration depended on trust and mutual recognition, as Camila explained: “*Abuela Pilar felt responsible for guiding because that knowledge had been passed down to her. She knew exactly what could and could not be shared.*” This affirmed *Kilombo*’s epistemic sovereignty and their right to decide how and with whom to share knowledge.

Although the design team perceived strong collaboration, participation was shaped by situated forms of care and affinity. As

Light and Akama note [16], dialogue in participatory design is a relational practice that sustains future social relations through an ethic of listening and responsibility.

3.5.3 Limitations of Conversation. Certain limitations shaped what could be expressed during the process. Camila noted that some participants adopted diplomatic tones on camera, aware their words would remain online. For *Kilombo*, such restraint was an act of care, protecting knowledge and honoring silences. Later edits or deletions were embraced as affirmations of autonomy, embodying Haraway’s [17] idea that knowledge is situated—speaking, silencing, or modifying as expressions of agency.

3.5.4 Self-Organization and Continuity. As production advanced, *Kilombo* members assumed greater control over editing, direction, and guest coordination, signaling emerging self-organization. This autonomy fostered ownership and trust, inspiring visions of future podcast seasons and independent projects.

Such collective responsibility built an infrastructure of care ensuring continuity beyond the initial research. As Escobar [18] notes, self-organization is key to autonomous design, sustaining relational worlds through collective decision-making and affective interdependence.

4 DISCUSSION

This section analyzes the dialogical and co-reflexive process that shaped the podcast, a collaboration between the *Kilombo Yumma* community (represented by Camila Villegas) and *Universidad de los Andes*. Rather than focusing on the final outcome, it examines design as a site of epistemic negotiation, where multiple voices

interacted, reshaped each other, and redefined notions of power, authorship, and legitimacy.

Central to this collaboration were epistemic tensions. Camila drew on Audre Lorde's statement that "*The master's tools will never dismantle the master's house*" [19] to critique academic structures that continue to function as spaces of non-belonging for Black women knowledge-keepers. For *Kilombo* participants, such as Abuela Pilar and Julissa, the process was meaningful precisely because they could speak without being corrected or linguistically polished. The design team embraced non-translation as an ethical and methodological choice, preserving each participant's unscripted voice as an act of historical repair and resistance against the colonizing logic of academic discourse. In this context, design operated as a mediating practice, enabling distinct grammars of knowledge to coexist. The idea of epistemic safety became key: for *Kilombo* members, it meant expressing themselves freely in their own rhythm and worldview; for designers, it meant turning over control and listening without imposing coherence.

Building on these epistemic considerations, the collaboration highlighted the intimate connection between knowledge and territory. Camila Villegas emphasized that "*the body is the first territory*," and for women displaced by conflict, continuing ancestral practices in Bogotá represented a reterritorialization of existence. In this sense, the body is not only a physical space, but a place of memory, ancestry, and agency [20]. The design team linked this to the concept of care, noting that while urban care is often bureaucratic or transactional, within the *Kilombo*, it is communal and embodied. Care thus became both an epistemic and political category, guiding the methodology and being grounded in listening, adaptation, and holding space. Trust was not assumed but co-constructed through reciprocal gestures, such as transparent communication and recognition of Camila's mediating role, fostering genuine dialogue and non-extractive collaboration.

Orality, central to Afro-Colombian knowledge transmission, found resonance in the podcast as a digital and narrative format. It allowed the community to narrate their own knowledge in their own voices, without translation or mediation, and decide what content to include and withhold. This explains how delegating authorship enabled epistemic sovereignty: the right to decide what knowledge to share or protect [21]. Therefore, the podcast became a "living archive" that validated oral tradition as a legitimate and communal mode of knowledge transmission.

Horizontality and dialogical symmetry were intentionally designed through shared decision-making and recognition of community leadership. The podcast proposed a redistribution of intellectual hierarchy. Camila later described the outcome of these efforts: "*We never felt inferior to our counterparts. Even though asymmetry exists, in the podcast the dialogue felt symmetrical*". This practice led to mutual recognition, legitimizing different types of knowledge without erasing their distinctions, and building consensus through reciprocity rather than uniformity [22].

While the podcast provided conditions for listening and acknowledging multiple perspectives as essential for epistemic repair [23], some participants self-censored in the presence of recording devices. This revealed traces of testimonial injustice and showed that openness requires environments where dissent feels safe. Both

parteras and the design team reimaged participation as context-dependent, proposing to hold future recordings within the *Kilombo* house to foster genuine expression. Ultimately, trust emerged as the main design material: a living, negotiated condition that allows participants to speak truthfully without fear.

5 CONCLUSION

The collaboration between *Kilombo Yumma* and *Universidad de los Andes*' Design Research Group exemplifies how critical-reflexive participatory design and systemic design can act as platforms for epistemic dialogue, cultural recognition, and collective healing in post-conflict Colombia. The *Entrever con* podcast, both as a process and a product, demonstrates that design can transcend its instrumental role to become a mediating practice that nurtures horizontal relationships between historically marginalized and institutionalized forms of knowledge. Through dialogical and reflexive methodologies, the project positioned orality, care, and territorial belonging as legitimate epistemic frameworks, challenging the dominance of textual and biomedical paradigms within academic and health systems.

Adopting a systemic design lens grounded in complexity and the dialogical principle revealed that plural knowledge systems can coexist without requiring consensus, and that friction can be a generative space for co-creation. *Kilombo*'s exercise of epistemic sovereignty—deciding what to share, how to narrate, and when to remain silent—redefined authorship and participation as acts of resistance. Simultaneously, the design team's effort to decenter authority, listen actively, and preserve unscripted voices marked a shift from extractive research toward relational and ethical co-production.

6 Limitations and Future Directions

The main limitation was the communication being mediated through a single community representative, Camila Villegas Mosquera. While this respected the *Kilombo*'s internal dynamics, it limited direct feedback from other members. Future iterations could strengthen collective reflection by involving more participants throughout the process, extending feedback loops, and ensuring that all voices inform the ongoing co-reflection and design of future encounters.

Acknowledgments

This paper seeks to make visible the hard work and legacy of Afro-Colombian midwifery embodied by the *Kilombo Yumma*, an institution of community care, political resistance, and cultural heritage. We especially thank Camila, Julissa, and Abuela Pilar for being the wisdom holders, creators, and curators of the *Entrever con* podcast, and for opening a space for dialogue despite the long history of intellectual extractivism that has affected their community. We also thank all our guests for sharing their knowledge and perspectives, and for their willingness to be part of such a rich and complex conversation that remains open to multiple agents of health and care. Their generosity and commitment made this collaborative process both possible and profoundly transformative. Finally, we thank *Universidad de los Andes* and the Faculty of Architecture and

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Relearn to Coexist as the Alternative

Reflections on Body-Territory Commons and Care in Participatory Design with Indigenous Women

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Abstract

Contemporary societies face overlapping ecological, social, and epistemic crises that reveal the exhaustion of modern Western modes of thought. Design is considered one of the many agents who have contributed to this situation, and even though there are now many actions focusing on repairing those damages, it's ongoing work. We need to constantly rethink our attitudes and epistemic approaches. This paper draws on work collaborations with indigenous women in Brazil, firstly, the Associação Paraguaçu de Mulheres Indígenas - APAMUI (Paraguaçu Association of Indigenous Women), and secondly, the professor, community leader, and Pajé (spiritual healer) Japira Pataxó. My goal is to explore how the ideas of care, body-territory and commons, in a feminist and communitarian perspective, can challenge the way we design together. The reflections presented here seek to contribute to broader discussions on decolonial and community-based approaches in participatory design, suggesting that through dialogue, reciprocity, and shared creation, we may relearn to design and to live together.

CCS Concepts

• **Applied computing** → Media arts, Social and professional topics; Race and ethnicity, Applied computing; Ethnography.

Keywords

Participatory Design, Body-territory, Care, Commons, Indigenous Women

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1 INTRODUCTION: WHY INDIGENOUS KNOWLEDGE IS IMPORTANT TO THINK OF ALTERNATIVES IN DESIGN?

We are facing a serious climate, economic, and humanitarian crises, if we keep going like this, society is moving toward a point of no

return [1]. Among it all, something has become evident: the Eurocentric, patriarchal, capitalist, and racist thinking that has shaped what we understand today as modern society must be destroyed, especially when considering the rights and needs of people in the global south.

Design, like many other fields of knowledge grounded in western science and technology, is largely shaped by the ideals of the modern world. This entails a series of factors, such as: a) the predominance of binary oppositions and hierarchies established between them (mind/body, culture/nature, reason/emotion, human/non-human, man/woman); b) the centrality of capitalist accumulation as the driving force of productive activities, where profit outweighs the maintenance of life [2]; c) the notion of development, grounded in the belief of linear progress, as a utopian path toward a full and meaningful life [3].

In this context, another element of crucial importance emerges, especially when discussing participatory design: the idea of the individual. As Escobar [3] points out, one of the most harmful consequences of modern rationalist society is the notion that we can exist as separate individuals, and that the only way to ensure our survival is by privileging isolated well-being. This belief, which sustains a constant state of global competition while dismantling multiple forms of situated and communal relations, stands as one of modernity's greatest fictions, yet one of the most difficult to refute.

Rethinking our ways of existing has become an imperative necessity. In this research, the path found to do so was through collaborative work with indigenous women. Indigenous knowledges, expressed in diverse forms across the many existing ethnic groups, are regarded as vital alternatives for rethinking modern ontology and our capacity to coexist with other ontologies.

In colonized countries such as Brazil where this research takes place, and from the perspective of a non-indigenous person from the Amazon, reclaiming these knowledges means not only collectively resisting the violent attacks suffered since invasion, but it also means to understand where we came from and what has been taken away from us.

It is crucial not to approach these encounters solely as romantic experiences, nor to assign indigenous peoples the responsibility to fix a world built to fail. But when we are given the opportunity to work, live and exchange knowledge with indigenous peoples, thousands of layers of imaginary sand placed among the past years are exposed. We get to see the roots of so many details in our way of existing and reconnect with memories violently erased, yet, and gladly, not completely destroyed.

I understand the way we come out differently from these interactions and what we can create together based on these discoveries,



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as places of many possibilities. On this Exploratory Paper I intend to walk through some experiences and realizations I had while working collaboratively with women from the Pataxó Hã Hã Hã peoples and Pataxó peoples.

2 WORKING WITH INDIGENOUS WOMEN, REFLECTIONS BROUGHT BY EXPERIENCE

The reflections presented in this text come from two experiences lived by the author in 2025. The first is related to Associação Paraguaçu de Mulheres Indígenas - APAMUI (Paraguaçu Association of Indigenous Women), and the second to the professor, community leader, and Pajé (spiritual healer) Japira Pataxó.

The APAMUI is an association of women from the Pataxó Hã Hã Hã peoples (composed by a variety of ethnic groups: Baenã, Pataxó Hãhãhã, Kamakã, Tupinambã, Kariri-Sapuyá e Gueren), placed in an indigenous land called Caramuru Paraguaçu, in Southern Bahia, Brazil. In January 2024, during a retomada (land reclamation process) the indigenous leader Maria de Fátima Muniz, known as Nega Pataxó, was brutally murdered by rural militias [4]. In honor of her memory and as a cry for justice, the APAMUI organized the first gathering of indigenous and non-indigenous women from the indigenous land Caramuru Paraguaçu, it took place in January 2025, under the theme “Women’s Fight and Resistance”.

My encounter with women from APAMUI took place at this event through the Political Ecologies Research Group, of which I am a member. We were invited to document the gathering through video, audio recordings, and photography, as well as to conduct interviews with the aim of producing a podcast about Nega Pataxó. Our team was composed of non-indigenous people, and the need for indigenous participation, especially in the production of the podcast, was a shared agreement, although we did not yet know exactly how this collaboration would happen.

We spent four days together, engaging on the organization of the event and witnessing a series of personal testimonies from indigenous women, discussion circles, and lectures by legal professionals, academics, and health practitioners. The gathering also included Toré ceremonies (spiritual rituals involving prayers and chantings practiced by some indigenous groups in Northeastern Brazil). During these experiences, ideas for the podcast and decisions regarding how to conduct the recordings were collectively developed with APAMUI members through shared conversations and the exchange of professional experiences.

Our team was multidisciplinary, however, from a design perspective, I was able to observe how creating an environment of collective sharing and care, grounded in care as a tool for political formation, made the participation of everyone involved in the project more meaningful. Although we had not personally known Nega, we sought to honor her life and to demand justice for her premature death. We did not employ specific participatory design tools, which I consider an aspect to be improved in future initiatives. Nevertheless, alongside the activities mentioned above, we were able to launch the podcast (Figure 1) *Nega Pataxó – Nosso Luto é Luta* across multiple digital platforms [5].

The second experience relevant to this discussion took place through my contact with PhD professor and Pajé Japira Pataxó. She is a Pataxó political and spiritual leader, holder of extensive



Figure 1: Podcast “Nega Pataxó – Nosso Luto é Luta”. Via personal archive, 2025.

knowledge about the vegetation of the Restinga, Atlantic Forest, Capoeira, and Brejo biomes. She is also known as the “master of care and healing” and currently resides in indigenous land Novos Guerreiros, Porto Seguro, Brazil. Japira is not formally literate, but holds extensive oral and traditional knowledge, which brought her to receive a doctoral degree in Education through a university program that recognizes traditional knowledges as worthy of being part of the academic environment. The aim of this program arises not only from the desire to recognize the importance of these knowledges but also from the intention to challenge the kind of knowledge produced within academia in its four fundamental dimensions: pedagogical, political, anti-racist (focused on ethnic–racial inclusion), and epistemic [6].

In one of my first meetings with Japira, who is also the author of an out-of-print book titled “Saberes dos Matos Pataxó”⁰, she expressed her interest in creating another book, this time about her experience as a visiting professor at UFBA. At that moment, our interests converged, and the central question for my doctoral research emerged: How can we co-create a book through participatory design with an indigenous professor and Pajé?

This research is currently in progress. So far, the methodologies employed have included a bibliographic review and participatory research. I accompanied Japira during her final semester of teaching, attending her classes (figure 2) and conducting open-ended interviews to learn more about her life story, her experience at university, and her aspirations for the book. Although her teaching contract is set to conclude at the end of 2025 and she has already returned to Porto Seguro, we continue to work together. The process of building the book follows a widely used approach known as oralituras [8]. In this context, participation takes place through a process in which I prepare the texts after our experiences and interviews, read them aloud to Japira, and she offers her reflections and considerations. Together with my supervisor, Laura Castro, I have been thinking about ways to develop the book’s layout also



Figure 2: Japira Pataxó during her classes, teaching about medicinal herbs. Via Personal archive, 2025.

collaboratively, considering she is an elder and the tools available in her local.

Both experiences have been profoundly rich in learning, not only academic, but above all, lessons of life. These are ongoing projects that have unfolded over the course of a year and continue to evolve with no defined end date. Although the doctoral program must happen at a specific amount of time, the relationships I have built already exceed the boundaries of academia. The reflections presented in the following sections emerge from the exchanges I have been cultivating with these women, teachers, and colleagues. They have become the foundation from which I shape my stance as an activist and designer, and from which I plan future collective actions. I share them here in the hope that they may contribute to similar research processes and collaborative practices.

3 BODY-TERRITORY

Accompanying these women has led me to understand that the fight of indigenous women represents the broader fight of indigenous peoples for their territories. Here, territory is understood not merely as a delimited area of land, but as an entire network of symbolic and material relations that characterize the existence of those who inhabit it [9]. Indigenous women's fight, therefore, also involves men, children, rivers, spirits, forests, and all beings that compose life in these spaces. The concept of body-territory emerges within this logic to express the inseparability between the physical body, the people, and their territories [10]. Coined by indigenous women and widely discussed by feministas comunitárias (community feminists) [11] [12], to fight from and through the body means recognizing that the spoliation experienced in the territories inflicts physical harm, and that the inverse is also true. Although all humans are mammals and part of nature, rural and indigenous peoples embody this relationship more visibly; they are less alienated from the nature that constitutes them than those living in urban contexts.

Hernández [13] adds that a fundamental aspect for understanding women's relationship with the defense of their territories is

to observe everyday life, for it is within this space that women organize themselves and plan their forms of action. This became very clear to me in the moments we shared meals, prepared spaces for activities, or simply sat down to rest. The conversations that arose in those moments were sometimes more formative than those that took place during the scheduled discussion sessions.

I understand that we are all constantly fighting against time, and it is rare that we have hours or days to truly be together. Yet, I came to realize the importance of simply being together when it comes to participation. We cease to be external agents arriving to intervene in a place we know little or nothing about and instead become part of the process; we engage with it and allow ourselves to be affected by it.

Julietta Paredes [12] states that fighting within the body is to recognize the qualities that each one possesses as an individual, yet without seeking individuality, but rather community. It is to understand the unique ways in which each person can contribute to their community. Recognizing the singularity of everyone from this perspective enriches our understanding of participation as a valuable mechanism of creation: if each person is unique, and within a project we engage in dialogue among so many ways of being, imagine the world of possibilities we can create.

As designers we tend to keep a distance from our "clients" and our projects, we seek to be impartial. Even in participatory actions we may try to pretend "we are not there". I wonder, what would mean to design from the perspective of body-territory? To remember we are also part of nature and to reflect about what kind of territories we bring or are trying to create when we intend to co-design with someone or a group of people?

4 COMMONS

Regarding the commons, the concept encompasses two main ideas. The first is that natural goods are inalienable rights and therefore cannot be subjected to the neoliberal logic of privatization, neoextractivism, and overexploitation [14]. The second expands this view into the realm of social relations: it is not only about seeing natural goods as resources to be protected but about recognizing the importance of the spaces and forms of cooperation that sustain community life. The commons, in this sense, also refer to the bonds and relationships that allow life in community to persist and that ensure our continued access to shared resources [16].

Within this context, the idea of community may be understood as the concrete expression of what it means to be human. Although we often have the impression that we experience the world individually and depend only on ourselves, this is not the case [16]. To be human implies the networks of relations that constitute us; for some authors, such as Gutiérrez [16], these are so deeply intertwined that we are our relations. Living alongside indigenous peoples allowed me to rediscover a kind of communal experience I had only known within my family, which now I recognize as having strong indigenous influences. Svampa [14] argues that peripheral territories, whether urban or rural, are true "factories of solidarity," as outside the formal market and in the absence of the state, many of these spaces are sustained through networks of self-management and cooperation.

In design, some works that engage with the question of the commons [17] expand the concept to include the results and knowledge that emerge from designers' practices, as well as the ways in which these are distributed within society. This is a complex issue, as the capitalist world privileges competition and defends ideals of individual innovation, while activities that attempt to produce the common [18] do not fit within this logic.

Design from a communal perspective, one that places the continuation of life rather than profit, at its center, appears useless in the eyes of capitalism. Cooperative environments require time, discussion, negotiation, sharing and the ability to deal with conflict in a positive way. Although such processes demand much from the individuals involved, they are the only way to build a communal space in which people recognize that interdependence is essential [19].

In this sense, protecting the commons means fighting to build and sustain the networks of solidarity that emerge within collective spaces of creation and experimentation. Even though they still happen in a capitalist world they also operate in ways beyond the logic of both state and market. The goal is to find ways of designing toward reencountering the common and reconstructing communal spaces. These processes take longer, follow a different logic, and directly challenge the notion of the designer as a savior or a genius. Yet they are essential if we wish to question and reimagine the ways participatory design can be practiced as a form of community.

5 CARE

Studies on care emerge from a feminist perspective of the activities traditionally understood as productive and reproductive within classical Marxism. The first is associated with productive labor, which transforms nature and generates consumer goods and surplus value; the second refers to the work necessary to sustain the existence of producers, in other words, the actions that ensure the continuation of life on Earth. Reproductive activities are usually unpaid, valued instead through the "currency of love," and assigned to feminized bodies. Among these activities lies the practice of care [20].

Fraser [20] argues that we are living through a care crisis, as one of capitalism's greatest contradictions is its systematic destruction and subjugation of the very forms of life-sustaining work, which are essential for profit-generating labor and to keep the system running. Regarding care, there's a double problem. The first, as already mentioned, is that there is no space for care within the capitalist system, if there is willingness, there is no time. And how could willingness exist within a logic that prioritizes individual, supposedly meritocratic, well-being?

The second is the need to reframe care. Because care has long been associated with the oppression experienced by women, liberal feminism has often constructed an idea of emancipation that also denies care among us. Instead of rethinking ways to collectivize care, this approach ends up perpetuating oppression by outsourcing care work to women more economically vulnerable. There has been, in a way, an effort to become the masculine image, rather than to dismantle it and reimagine gender roles [20].

It is precisely due to this erasure of the feminine, in the name of a supposed representation of the autonomous masculine, that many

indigenous women do not identify with western feminism, which still often operates within a colonial and capitalist logic. What I have been able to observe during these months of working together is that these indigenous women do not deny the woman that exists within themselves, even though the system constantly pressures them to do so.

Chaves [12] comments that indigenous peoples have transformed their relationship with nature into a political stance, reclaiming a view that was once used to diminish them and transforming it into a symbol of resistance. In my view, the indigenous women I work with do the same with care. For example, during the gathering, APAMUI created a Care Tent. Known as a space to provide physical, spiritual and psychological help alongside political discussions and leisure time, the tent used care as a fighting tool, it was a political choice aimed at strengthening the communal bonds among the women who gathered there. Likewise, when plants, prayers, and healing rituals are brought into the western academic space of power, through a Pajé professor, indigenous care practices cease to be seen as "superstition" and come to be understood as embodied knowledges necessary for human life.

I want to emphasize that I do not wish to fall into essentialisms, nor to assume that being a woman implies a "natural" tendency toward care. Rather, I believe that if we, who have long been made responsible for such tasks, do not take it upon ourselves to reflect on them and reinterpret them as sources of strength and resistance, while also demanding that care gets recognized as everyone's responsibility, it will certainly not be done by those who oppress us and benefit from these mechanisms.

6 CONCLUSION: ON WALKING GENTLY, TOGETHER, AND RECLAIMING THE WILL TO DREAM IN PARTICIPATORY DESIGN

As a conclusion to this exploratory paper, I recall the plea of indigenous thinkers such as Ailton Krenak [21] and Cristine Takoá [22], who ask us to walk gently upon Earth. When I set out to explore possibilities for participatory work with indigenous peoples, I was aware that, as a non-indigenous person, I would need to exercise heightened ethical attention and patience. Participation does not emerge spontaneously; it must be nurtured. It requires time, commitment, respect, and collective agreements. I also knew I would learn a lot, though perhaps, I didn't know how much.

I understand that the ideas presented here are not merely academic concepts, but perspectives of resistance aimed at sustaining life. These are learnings that originate within indigenous social movements and make their way into academia. The dialogue between these worlds is of utmost importance, yet we must not forget that beyond long written texts, what is truly sought here are alternative ways of existing within, and against, the Eurocentric, patriarchal, capitalist, and racist system that so deeply oppresses us.

What I would like to add to the discussion on participatory design is that, when working with groups whose ontologies differ from the modern western one, it is important to understand that the focus is not solely on arriving at a final product in which all stakeholders have participated. Sometimes we might not get to a final product on a material form, but when we see ourselves from a body-territory

perspective and engage in creatin a space for dialogue with care, we challenge a series of elements that isolate us and exercise our capacity to create and dream collectively. These experiences are also important “products” of participatory design.

Is important to add that I do not intend to diminish the importance of the products generated through these activities, as income generation and the perpetuation of memory are also means of survival, but I want to emphasize it’s relevant to dedicate active effort to relearn how to exist and resist in community.

Kopenawa [23] says that we, non-indigenous people, have lost our capacity to dream. I see in the exchanges with groups whose ontologies differ from ours as ways of rediscovering what colonization, eurocentrism, patriarchy, and capitalist society have taken from us. It is not an easy path, but through encounters and collaborative work, perhaps it is possible to dream again.

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Protecting Protests from Institutional Repression

A Case on Infrastructuring Participation Through Agonistic Design

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Abstract

This paper explores agonistic design amid state repression. First, I use Agonistic Pluralism to reframe Participatory Design from consensus-oriented methods to protecting spaces of contest. Second, I establish protests as spaces of contest under systematic attack from antagonistic states. Third, I propose Activist Reef and Project Nemo, conceptual probes exploring PD's operation under active state repression. These probes open three critical research areas: open evolvable systems countering adaptive repression; governance balancing openness against vulnerability; and geospatial sensing enabling state accountability. I conclude that agonism constitutes peacekeeping by preventing total repression's false binary of radicalization or silence.

CCS Concepts

• **Human-centered computing** → Collaborative and social computing; Human computer interaction (HCI); • **Security and privacy** → Human and societal aspects of security and privacy; Social aspects of security and privacy.

Keywords

Agonistic Design, Collective Intelligence, Infrastructuring, Protest, Repression, Open Evolvable Systems, Solidarity

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1 Introduction: The Crisis of Democratic Contest and the Agonistic Turn

On November 16, 2019, as millions of Iranians took to the streets in protest of drastic fuel price hikes, the government enacted a near-total internet shutdown that lasted nearly a week. During those dark days, security forces used lethal force against unarmed protesters, killing at least 323 people while a digital blackout prevented documentation or international scrutiny [1]. This case exemplifies a growing trend: between 2016 and 2021, there were 931 internet shutdowns across 74 countries, with nearly half occurring

during protests [2]. As digital repression tactics proliferate, including social media censorship, geo-tracking, facial recognition, and network blackouts, the success rate of nonviolent civil resistance has declined from 65 per cent in the 1990s to 34 per cent by 2019 [3].

Participatory Design (PD) has a long and deep history rooted in advancing democracy, tracing its origins to the Scandinavian labor movement through projects like DEMOS and UTOPIA, which gave affected workers agency over the tools governing their workplaces [4]. However, contemporary PD practice often assumes collaboration with institutions and relies on invited, consensus-oriented methods. This focus, described as "design for politics" [5], which aims to improve the mechanisms of governance, is inherently ill-suited to confrontational, agonistic protest contexts where the state turns antagonistic.

This paper reframes PD toward political theorist Chantal Mouffe's concept of Agonistic Pluralism, where conflict and contestation are seen as essential for defending difference [5]. When institutions deploy lethal repression, they turn antagonistic, treating protests as a threat to eliminate rather than a legitimate position to contest. We explore the research question: How can participatory design, informed by Agonistic Pluralism, protect and sustain nonviolent protests as spaces of contestation from repression by institutional actors? This question challenges the PD community to break the assumption of institutional cooperation and confront a new reality: institutional antagonism as a design variable.

I present Activist Reef and its flagship initiative, Project Nemo, as conceptual design probes aimed at investigating this question. Activist Reef is an open repository of do-it-yourself counter-repression tools, while Project Nemo's Product-Service System includes three integrated components: the Protest Poncho, which forms satellite-visible signals of human rights abuse during internet shutdowns; the Collective Evidence App, which supports both global evidence sharing and on-site coordination; and a Global Listener Network in a proposed partnership with Amnesty International, which enables collaboration between local activists and global volunteers.

The design concepts were developed by a team of six graduate students as part of a design studio in a master's-level program at Politecnico di Milano. It is important to emphasize that the resulting Product-Service System Design serves solely as a conceptual probe intended to raise critical questions rather than for practical deployment. I explicitly state that this work did not follow established participatory design methods. Due to time constraints and the high-risk contexts, stakeholders such as activist communities, human rights organizations, and institutions were not consulted. This approach deliberately mirrors research exploring processes



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that attempt to “design for participation” rather than relying solely on consultation during the initial phases [6]. This methodology acknowledges that participation is not always immediately possible and positions early-stage conceptual work as a necessary precursor that protects vulnerable communities while mapping infrastructures for future participation. Simultaneously, it fundamentally expands the designer’s role: rather than facilitating participation in design processes, the designer works to shield participation by activists (in the form of protests) from lethal state repression. Here, design becomes a tool for creating protective conditions for pre-existing participation rather than extracting participation.

Through experimental probes, this paper uncovers tensions and possibilities in agonistic design, offering formative insights into a new PD frontier: navigating institutional antagonism in contexts of lethal state repression. Institutions here are not passively refusing to cooperate; they are actively antagonistic, deliberately counter-acting design outputs that seek to sustain agonism. The designer must therefore account for ongoing institutional counteraction as an adaptive design constraint.

2 Theoretical Foundations: Agonistic Pluralism and the Reframing of Participation

Participatory Design’s founding democratic principle is that people affected by a decision should have an opportunity to influence it. Historically, PD emerged to challenge power structures held by employers, ensuring marginalized workers had agency over technology transforming their workplaces [4]. However, this evolution has inadvertently narrowed PD’s engagement with democracy to primarily consensus-oriented approaches, what DiSalvo (2010) terms “design for politics,” characterized by seeking agreement through rational deliberation and institutional collaboration. While valuable, this consensus-focused orientation represents only one dimension of democratic theory and practice.

Agonistic Pluralism offers an alternative framework, one grounded in “productive conflict or contest”. Agonistic democracy rejects the pursuit of consensus through rational deliberation, acknowledging instead the necessity of “radical difference and contentious expression” [5]. In Mouffe’s framework, democratic vitality depends on “spaces of contest,” arenas where power relations are continuously challenged, contested, and renegotiated, ensuring that no single perspective achieves permanent dominance [5].

From an agonistic perspective, PD’s role extends beyond facilitating consensus-building to creating and protecting spaces where democratic contestation can occur. These spaces manifest across the public sphere in various forms: academic discourse, judicial processes, social movements, and non-violent protests. Returning to PD’s Scandinavian origins through this lens reveals that worker unions functioned as ‘spaces of contest.’ The LKAB miners’ wild-cat strikes were instrumental in driving democratization reforms [7]. The subsequent DEMOS and UTOPIA projects can thus be understood as implementations of those reforms that emerged from ‘spaces of contest’.

This analysis exposes a critical limitation in contemporary PD practice. Traditional PD operates through invited participation: institutional actors invite stakeholders into structured processes aimed at consensual outcomes. By contrast, ‘spaces of contest’ like

protests operate through unsolicited participation: citizens self-organize to challenge institutions when they perceive democratic failures or exclusions [5]. DiSalvo’s distinction between “design for politics” and “political design” highlights this difference: while design for politics supports existing governance mechanisms through consensus-building, political design cultivates ongoing contestation and dissensus as essential democratic practices [5]. Political design recognizes that healthy democracies require both institutional cooperation and institutional challenge.

3 Context: Protests as Spaces of Contest Under Attack

Protests are spaces of contest; they amplify the collective voices of people, demanding attention and action from those in power. Without peaceful protests, our society would lose a vital way of expressing dissent, advocating for change, and standing up for justice. Amnesty International defines protests as “non-violent direct action that provides an avenue to express grievances and demands in the public domain, especially at times when existing political, social, economic or cultural systems preclude or systematically ignore those demands” [8]. Historically, protests have played a crucial role in securing human rights through public engagement in the civic sphere. From the Montgomery Bus Boycott, which dismantled segregation on public transportation, to modern marches addressing racism, inequality, and climate destruction, protests force those in power to confront systemic problems and inspire the public to act.

However, governments have increasingly adopted antagonistic strategies, deploying ‘ruthless repression tactics’ to suppress non-violent protests globally [9]. Repression is defined as any coercive action taken by state authorities to control or prevent challenges that could alter the status quo [10]. Tactics include enacting laws curbing demonstrations (such as the UK’s Police, Crime, Sentencing and Courts Act), the use of unlawful force, and digital suppression [9]. Digital organizing, while empowering, has simultaneously exposed protesters to surveillance and targeted suppression.

One of the most concerning tactics governments employ to repress dissent is the abuse of digital rights. Across the globe, tactics such as censoring social media posts, geo-tracking activists, using facial recognition at demonstrations, and imposing internet blackouts have become increasingly prevalent [8]. The most concerning abuse of digital rights is the imposition of internet blackouts, which occurred in 225 public demonstrations between 2016 and 2021 [2]. These blackouts are especially dangerous because they impede the free flow of information both domestically and globally, preventing international bodies from monitoring and documenting human rights violations. In contexts such as Iran, internet shutdowns were reportedly used to conceal state-perpetrated violence, exacerbating human rights violations [1]. Addressing this systematic abuse is essential to protecting the framework of Agonistic democracy globally.

4 Activist Reef and Project Nemo: A Conceptual Agonistic Infrastructure

Having established protests as vital ‘spaces of contest’ under systematic attack, we now turn to a design inquiry that reframes

Participatory Design (PD) from working with institutions to protecting publics from them. To explore how participatory design might operate when institutions become antagonistic rather than collaborators, we developed Activist Reef and Project Nemo: two design concepts that function as research probes into agonistic design. Unlike traditional PD interventions that assume institutional cooperation, Activist Reef operates as an open infrastructure designed to sustain democratic contestation under active repression from the state.

4.1 Activist Reef

Activist Reef (Figure 1) is an open-source repository of Do It Yourself (DIY) tools designed to empower activists and protect protesters from dangerous repression tactics. It is meant to function like a GitHub for Activists.

Why?

The government is increasingly adopting sophisticated, technologically advanced tactics to repress non-violent mass demonstrations and other forms of protests. These tactics include geo-tracking, surveillance technologies, facial recognition, and internet shutdowns, among others [8]. In such circumstances, protestors are vulnerable and under threat of human rights abuse. Typical products designed to address this vulnerability, like anti-surveillance clothing, fail as single-point solutions; typical market-based solutions are inaccessible during emergency scenarios (typical to protests) and because their very success turns them into targets for neutralization.

How?

The platform is designed to support a full cycle of tool development and deployment through four key functions:

- **Discover:** Citizens can access a curated repository of DIY tools designed to counter specific repression tactics, such as surveillance or internet shutdowns. This makes existing solutions, from across the world, easily findable.
- **Propose:** Activists can contribute their own ideas by proposing new DIY tools, fostering a culture of innovation and experimentation within the community.
- **Test:** Citizens anywhere in the world can test these proposed tools in real-world scenarios and provide valuable feedback on their effectiveness and usability.
- **Adapt:** Citizens can modify and localize existing tools to fit their unique political contexts and available resources. They can then share these improved versions back to the platform for others to use and build upon.
- **Report:** Citizens can flag harmful or malicious tools, escalating them to a dedicated moderation team for review and removal.

So What?

The value of the Activist Reef lies in its resilience and adaptability. By enabling global collaboration and constant evolution, it creates a robust ecosystem rather than a single point of failure. It empowers movements by decentralizing the creation of resistance tools, ensuring that knowledge is shared and built upon collectively. It also aims to improve the discoverability and usability of existing resources, such as those already created by organizations like

Amnesty International, by integrating them into a more dynamic, open-source framework.

4.2 Project Nemo

Project Nemo is a specific product-service system designed to be hosted on the Activist Reef. Its primary goal is to protect the digital rights of protesters during mass demonstrations, specifically by providing tools to transform individual protesters into a collective force capable of documenting and signaling human rights abuse internationally during internet shutdowns.

Why?

From 2016 to 2021, 931 internet shutdowns were recorded across 74 countries, almost half of which were carried out in the context of protests and political crises, with 225 shutdowns recorded during public [2]. Shutdowns, particularly during protests, restrict citizens from mobilizing, effectively silencing dissent, while also preventing international bodies from monitoring and documenting human rights violations. Internet blackouts are especially dangerous, as they impede the free flow of information both domestically and globally.

How?

Project Nemo is comprised of two interdependent components (Figure 2), explained in a downloadable DIY Guide:

The Protest Poncho: This is a DIY wearable garment that serves a dual purpose (Figure 3). The ponchos are equipped with Velcro strips, allowing protesters to connect them together to form a large, continuous surface of fabric (Figure 4). When enough are connected, this surface creates a signal large enough to be captured by satellite imagery.¹ This acts as a "silent chorus," visibly alerting international human rights organizations and the global community of the abuse of human rights at a protest site, even during a total internet blackout. The poncho is designed in a DIY version using common household materials to ensure accessibility and scalability in emergencies.

The Collective Evidence App: This mobile application leverages collective intelligence for evidence collection and off-grid communication. With Internet, protesters can use the app to capture photos and videos of human rights violations. The app anonymizes the evidence and immediately shares it with international "Listeners" (monitoring volunteers from partner human rights organizations like Amnesty International), ensuring the data is secured off-site before a shutdown occurs.

When the internet is cut, the app switches to Wi-Fi Direct and mesh networking technology, similar to the Bridgefy app used in the Hong Kong protests. This allows protesters to create a peer-to-peer network to continue sharing evidence locally, coordinate their actions (including forming the poncho signal), and maintain unity without a central network. A sudden loss of communication from the app also acts as a "red flag" for international monitoring volunteers, prompting them to begin satellite surveillance of the area.

Proposed Partnership with Amnesty International

¹Feasibility Note: Current satellite imagery achieves 31cm ground resolution [11], 0.31m × 0.31m per pixel. A poncho provides ~1 m² of surface area; a minimum cluster of 10–15 protesters create ~10–15 m² spanning ~100–150 pixels, sufficient for detection by modern imagery analysis tools.

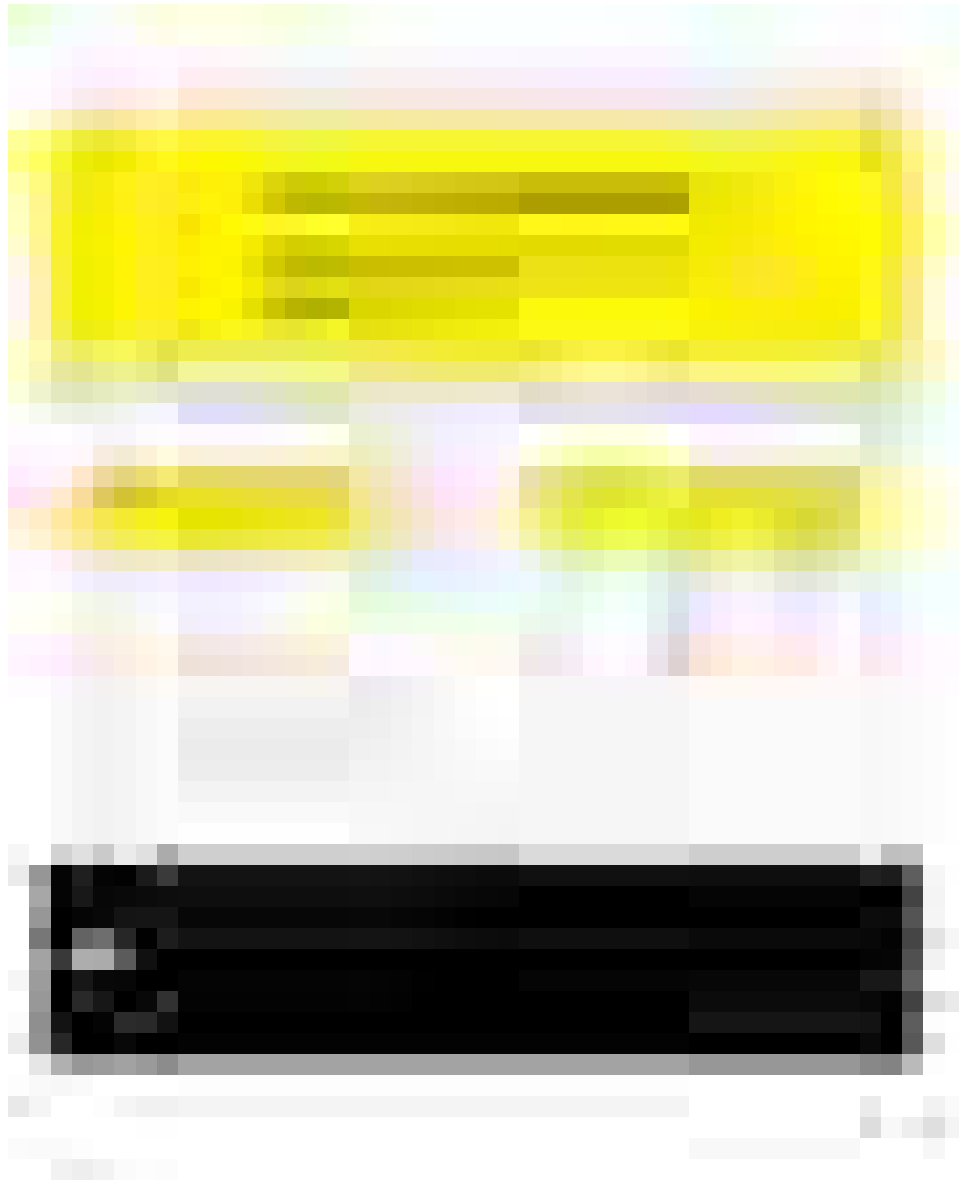


Figure 1: Screen Mock-up for Activist Reef

A crucial component of this system is a proposed partnership with Amnesty International (Figure 5), which would enhance its functionality and impact in three keyways:

- Amnesty’s global network of activists and trained volunteers can participate in on-site coordination at demonstrations, test the system’s tools in diverse local contexts, and provide real-world feedback.
- The partnership would provide access to a large pool of international volunteers dedicated to monitoring digital repression. These “listeners” would receive evidence from the app, identify and verify internet shutdowns in real-time, and

alert the global community when a signal is lost or seen via satellite.

- Amnesty’s established institutional influence can be leveraged to apply political and diplomatic pressure on governments to reverse internet shutdowns and hold them accountable for human rights violations.

This partnership would bridge the gap between grassroots activists using the tools and the international bodies capable of amplifying their message and advocating for change.

So What?

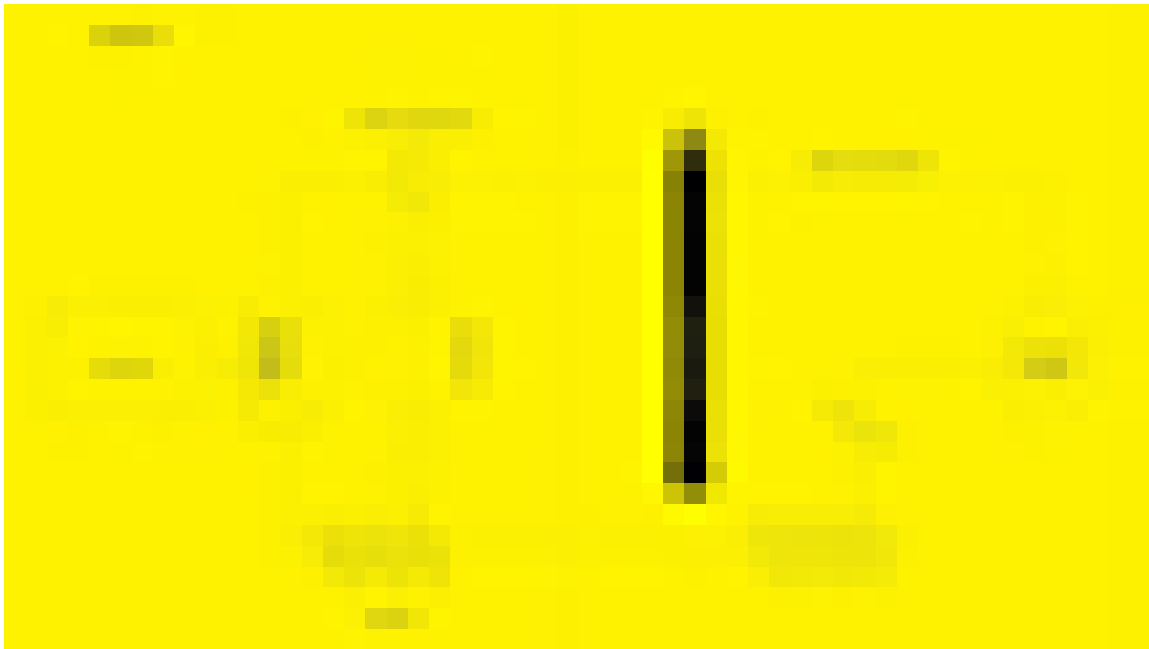


Figure 2: Project Nemo System Map highlighting all the components of the Product-Service System



Figure 3: DIY instructions for the protest poncho and our first prototype

Project Nemo's value is in providing a practical, low-cost, and decentralized solution to one of the most dangerous forms of modern repression. It empowers protesters by:

- Enabling them to document evidence of human rights violations securely and in real-time.
- Allowing them to maintain local communication and coordination when centralized networks are cut, reducing panic and increasing mobility.
- Providing a powerful method to bypass state-enforced black-outs and communicate directly with the international community, ensuring visibility and global solidarity.

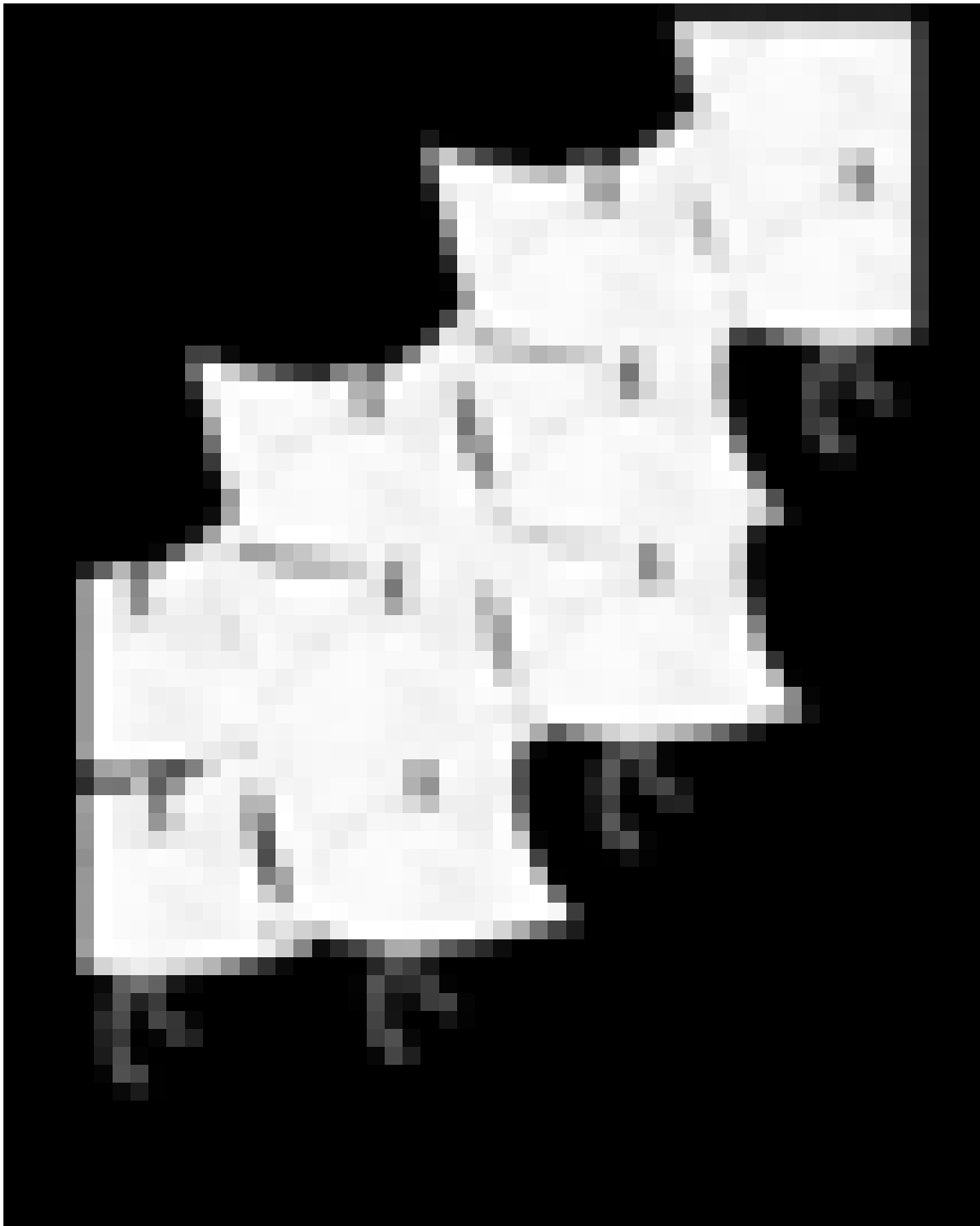


Figure 4: Render of Protest Poncho in Use

5 Key Insights: Tensions and Possibilities for Agonistic Design

Analyzing Activist Reef and Project Nemo provides a lens through which to derive theoretical implications for PD practice when confronting institutional antagonism, especially in the pursuit of "infrastructuring" that helps constitute a public [12].

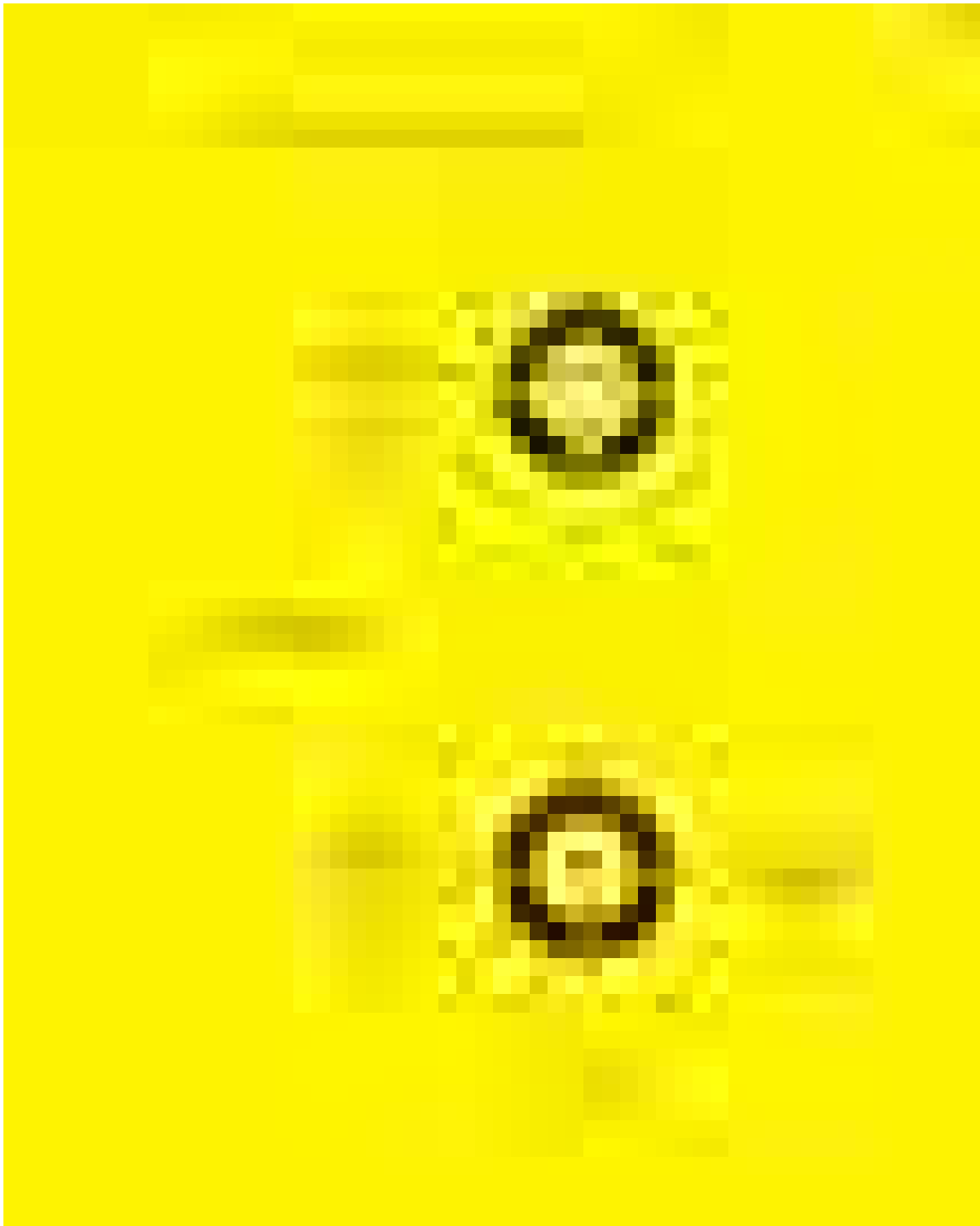


Figure 5: Diagram explaining the impact of partnering with Amnesty International

5.1 Insight 1: Adaptive Repression Requires Open, Evolvable Systems

Multiple attempts have been made to design products that protect protesters from repression tactics such as digital surveillance.

Table 1: Design Concept Highlights [17]

Title	Activist Reef	Project Nemo
Purpose:	Seek Solutions, Learn and Adapt	Understand Problems, Decide and Act
Methods:	Open-Source Repository, DIY Tools	Participatory Monitoring, Peer-to-peer Exchange, Open Data, Data Collaborative, DIY Tools
People:	Activists, Citizens, Human Rights Organizations	Activists, Citizens, Human Rights Organization Volunteers
Data:	Citizen-Generated Data	Citizen-Generated Data, Satellite Data

Capable Design’s facial recognition-evading clothing [13], Stealth Wear’s anti-drone hoodies [14], and ISHU’s anti-flash scarves are all recent examples [15]. However, these single-point solutions face significant challenges in the context of protest for two reasons:

Market-based products become inaccessible in emergencies. Large-scale protests typically unfold during crisis situations where access to monetary resources is limited and, more critically, standard product distribution channels break down. When digital networks are shut down, and state or city-wide emergencies are declared, delivery services do not operate, whether due to government restrictions, public safety measures, or infrastructural collapse. In these situations, protesters simply cannot acquire costly anti-surveillance products, regardless of demand or availability online.

Success breeds neutralization. When any product proves effective in countering repression, it becomes a target. Institutions will adapt, developing new technologies or tactics to neutralize its effects before it can be widely deployed during subsequent protests. For example, if Capable Design’s patterns routinely evade facial recognition, authorities will swiftly update their algorithms to defeat such designs. Single-point solutions, no matter how innovative, inevitably become predictable targets for resourceful and adaptive institutions.

To truly protect spaces of contest, PD must acknowledge the reality of institutionally adaptive repression: the capacity of state and corporate actors to continuously learn from protest tactics and iteratively improve their surveillance and control technologies. Traditional design produces closed systems where functionality is fixed at ‘design time’. Such systems are fundamentally ill-equipped to handle adaptive repression because it is an ‘impossible task’ to anticipate all possible countermeasures in advance [16].

Countering these constantly learning systems demands a fundamental shift toward developing open, evolvable systems. This is the core work of Meta-Design which “characterizes activities, processes, and objectives to create new media and environments that allow users to act as designers and be creative” [16]. Meta-Design empowers the “owners of problems,” protesters, to become designers themselves, continuously modifying and extending their tools in response to emerging tactics. This approach ensures that the system is not a static artifact but a framework capable of handling the “unlimited extensions that might arise” from constant contestation [16].

5.2 Insight 2: Collective Intelligence, Openness, and Vulnerability

Collective Intelligence (CI) is created when diverse groups work together, often with technology, to mobilize information and ideas to address a social challenge [17]. Activist Reef and Project Nemo utilize CI to infrastructure participation outside of restricted co-design sessions (‘design time’), enabling protesters to continuously design, adapt, and evolve their tools to counter changing repression tactics [12]. Table 1 uses Nesta’s CI descriptors (purpose, methods, people, data) to describe the two probes [17].

However, integrating CI into an open infrastructure in an adversarial environment exposes a critical vulnerability: openness itself becomes a liability. State actors may subpoena repositories to identify and prosecute contributors, while malicious actors can exploit shared knowledge to develop countermeasures. The repository risks becoming an intelligence resource for those seeking to improve their repression tactics.

This tension reveals fundamental conflicts within the system:

Contributor Identification: Contributions can reveal identities through metadata, behavioral patterns, or legal compulsion by state actors seeking to subpoena repositories.

Adversarial Exploitation: State institutions could perform bulk data extraction using automated systems, providing a comprehensive intelligence resource for countermeasure development.

Malicious Contributions: Bad actors might inject harmful instructions, propose intentionally flawed tools, or spread disinformation.

Instigating Violence: Contributors may share DIY tools that enable violent actions.

Participatory Design must evolve new frameworks for managing these contradictions. Traditional open-source models assume cooperative contexts where transparency benefits all participants. In agonistic settings, transparency becomes a double-edged sword, enabling collective intelligence while exposing participants to harm. Critical questions emerge: How can democratic governance structures be embedded in open systems without creating new vulnerabilities for contributors? How can data management frameworks protect contributor anonymity while maintaining collective intelligence functionality? How can open systems identify and exclude bad actors without creating restrictive gatekeeping mechanisms?

5.3 Insight 3: Agonistic Accountability Infrastructure and the Geopolitical Data Divide

When governments shutdown the internet during protests, they also block the critical evidence pipeline revealing state violence, preventing international visibility. Stripped of real-time communication, local activists and citizens lose the means to call for global support and justice. In these moments, geospatial data, especially satellite imagery, becomes an agonistic accountability infrastructure, holding states accountable for human rights violations [18].

Project Nemo's feasibility hinges on securing access to this remote sensing technology, yet the probe exposes a severe geopolitical data divide [19]. Commercial satellite operators increasingly deny services to human rights organizations to avoid upsetting major government clients. Amnesty International's Special Advisor for Remote Sensing has expressed concern that companies degrade resolution over key areas, exemplified by the U.S. government placing a unique cap on resolution for images of Israel [20].

Furthermore, existing international policy frameworks, such as the 1986 Principles Relating to Remote Sensing of the Earth from Outer Space, are critically outdated. They were originally designed for natural resource management, not for documenting human rights violations in conflict [20]. These principles lack mechanisms for data access, transparency, and accountability necessary for humanitarian use, rendering initiatives like Project Nemo vulnerable to commercial and political pressures.

Resilient global solidarity requires transparent governance models for critical geospatial sensing technology, with non-negotiable commitments to human rights documentation. This opens a new arena for Participatory Design: developing services that adapt existing geospatial sensing technologies specifically for humanitarian purposes, co-designing transparent governance structures that prioritize human rights access over commercial or political interests, and creating alternative sensing networks that bypass traditional commercial gatekeepers entirely.

6 Conclusion: Agonism and Peace

This paper has demonstrated a fundamental reorientation of Participatory Design: away from consensus-based facilitation toward agonistic design that actively protects spaces of contestation from institutional antagonism. Our case, nonviolent protests under state repression, reveals what this reorientation demands in practice. States deploy lethal repression against protests as deliberate acts to protect hegemony: internet shutdowns silence witnesses, facial recognition targets organizers, and mass arrests foreclose contestation.

Protecting protests requires PD to treat institutional antagonism as a design variable. This shifts the designer's role fundamentally: from facilitator of consensus to shield against antagonistic counteraction. The Activist Reef and Project Nemo probes articulate key areas for future PD research:

Open, Evolvable Systems: Develop practices for designing open, evolvable infrastructures where participation and design extend continuously beyond a fixed 'design time.'

Governing Openness: Create democratic governance models that balance the necessity of openness for collective intelligence against the vulnerabilities it introduces in agonistic contexts.

Geopolitical Data Divide: Engage geospatial sensing governance to support global solidarity networks capable of monitoring and documenting human rights abuses.

Only by addressing these tensions can PD shift from facilitating consensus to actively protecting spaces of contest from institutional antagonism. This is peacekeeping. Total repression manufactures a false binary: silencing dissent or violent escalation. By protecting spaces where protesters can organize and contest power, design sustains nonviolent political dialogue, enabling peaceful coexistence without compromising voice. Agonism channels conflict productively, preventing collapse into oppressive consensus or radicalization. The challenge is to evolve participatory design tools and processes that embrace open contestation in hostile environments, support continuous adaptation under institutional pressure, and uphold protesters' fundamental right to speak truth to power.

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When Art Speaks: Participatory Exhibitions as Platforms for Collective Messaging in and beyond Indonesia

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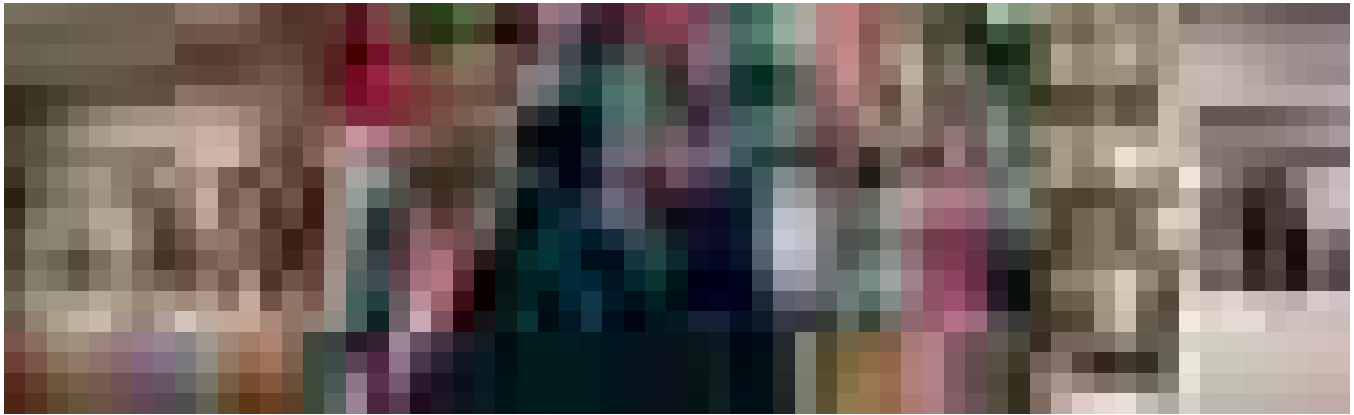


Figure 1: Rapid response exhibition in Japan held in September 2025 in response to the Indonesian political unrest.

Abstract

This paper investigates how participatory visual art exhibition can function as an infrastructure for collective messaging and social capital formation in politically constrained contexts. In response to the 2025 Indonesian political unrest and media censorship, we organized a rapid-response exhibition in Japan that generated over 1,900 A4 sized visual artworks from more than 1,600 contributors within three days. By leveraging Readily Available Technology (RAT) and a facilitator-as-enabler model, we created a platform that amplified grassroots voices as well as bonding and bridging social capital. Our findings demonstrate that such participatory exhibition can transcend their role as curated displays to become (1) political resources that convert social capital into advocacy for positive peace, (2) political practices that redistribute curatorial power and enable agonistic expression, and (3) transferable models for frugal, rapid-response participatory design. We conclude by

discussing the implications of this approach for expanding Participatory Design research into the realms of social movements and non-violent resistance.

CCS Concepts

• **Applied computing** → *Media arts; Fine arts.*

Keywords

Visual Art Exhibitions, Art Collective, Non-Violent Resistance, Social Capital

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1 Introduction

Indonesia has a long history of regulating political expression, with censorship practices extending from colonial governance through the New Order regime and into contemporary media control [46].

These conditions have shaped how artistic expression is produced and circulated, particularly in politically sensitive contexts, fostering reliance on informal networks and indirect forms of communication among creative communities [5, 12, 15, 22, 32].

In August 2025, Indonesians across the country erupted in protests following a controversial parliamentary allowance hike, economic grievances, and a delivery driver fatally run over by an armored police vehicle becoming the first civilian casualty [1, 28, 36, 43]. These events triggered widespread public outrage and mobilization, transforming streets, buildings, and social media into contested sites of collective messaging and symbolic action.

In response, the researchers initiated a participatory visual art movement that invited A4-sized artwork submission for a public exhibition. Although the discourse centered on Indonesia, safety concerns and restrictions on political expression precluded holding the exhibition there. Historical patterns of censorship since the New Order regime have fostered generational caution toward overt artistic dissent in Indonesia [20, 26, 33, 45]. The exhibition was therefore held in Japan, which ranks 12th on the Global Peace Index and exhibits comparatively low levels of violent demonstrations [16], providing institutional conditions that allowed non-violent expression without fear of repression.

This research conceptualizes a participatory exhibition as an infrastructural arrangement that enables participation beyond geographic boundaries under conditions of urgency. The exhibition operates not merely as a display, but as an infrastructural artifact that aligns Readily Available Technologies (RAT) [2, 13], standardized material constraints, and institutional conditions such as venue legitimacy and facilitator roles. This alignment allows participation, message making, and social value formation to occur simultaneously and at speed. This research address the following research questions:

- **RQ1: How can a visual art exhibition be designed to convey collective messages?**
- **RQ2: In what ways does a participatory exhibition generate value beyond visual art?**

To investigate these questions, we hosted a participatory visual art exhibition and examined how visual art could enable collective participation and message-making oriented toward peace.

2 Related Works

2.1 Art as a Non-violent Resistance

Within these constraints, art has historically functioned as a form of non-violent expression, enabling collective meaning-making and civic engagement when formal channels are restricted [7, 11]. While highly visible or confrontational artworks may invite negative interpretation or suppression [8], participatory and co-created artistic practices have been shown to foster collective identity, solidarity, and social cohesion without escalating conflict [4, 17, 40]. This background shaped the design challenge addressed in this paper: how to enable rapid, collective participation and message-making beyond geographic boundaries under conditions of political sensitivity.

2.2 Infrastructuring Participation Beyond Geographic Boundaries

Research in participatory design emphasizes that participation is not determined by geographic proximity alone, but by how technologies, practices, and institutional conditions are aligned to enable access and coordination. Star and Ruhleder describe infrastructure as relational and ecological, becoming operative only when embedded in everyday practice and sustained through conditions of use, access, and legitimacy [42]. From this perspective, distance itself is not a barrier; rather, participation emerges when infrastructural arrangements stabilize interaction among distributed actors.

Karasti further conceptualizes infrastructuring as an ongoing process that enables participation instead of delivering finalized systems [23]. Similarly, Selloni frames co-design for public-interest services as infrastructural work that aligns actors, tools, and norms to sustain participation beyond individual projects [39].

Drawing on these perspectives and service-dominant logic [27], we conceptualize the participatory exhibition in which value is co-created through interactions among multiple actors. Artists, coordinators, galleries, volunteers and audiences are defined as resource-integrating actors whose roles are coordinated through the exhibition infrastructure. Rather than a fixed platform, the exhibition functions as an infrastructural arrangement that aligns rationales of action, material constraints, and institutional conditions to enable rapid, geographically distributed participation under conditions of urgency.

2.3 Participation Levels and Interaction in Participatory Design

Participatory Design research has long emphasized that participation is not a binary condition but exists along multiple dimensions, including degrees of agency, influence, and interaction. Arnstein's *Ladder of Participation* conceptualizes participation as a spectrum ranging from tokenistic forms of involvement to full citizen control, foregrounding questions of power and decision-making authority [6]. While originally developed in the context of urban planning, Arnstein's framework has been widely adapted in design research to interrogate how participation is structured and distributed.

More recent work in participatory and digital design contexts has extended these ideas by distinguishing between *levels of participation* and *modes of interaction*. De et al. propose a participatory matrix that evaluates participation along two dimensions: the degree of participation and the nature of interaction throughout the process [14]. This approach enables the analysis of large-scale or distributed participation scenarios, where not all participants engage at the same depth or through the same mechanisms.

Within this framework shown in Table 1, participation is evaluated along two axes: the *Level of Participation*, indicating degrees of agency, and the *Level of Interaction*, describing how engagement is mediated or enacted. Together, these dimensions support the analysis of differentiated participation across actors and roles.

This two-dimensional view of participation is particularly relevant for analyzing participatory initiatives operating under constraints of scale, urgency, or geographic distribution. Rather than assuming uniform participation, the matrix enables researchers to

examine how different roles and actors engage through differentiated forms of agency and interaction, and how these configurations shape collective outcomes.

Table 1: Matrix of participatory variables [14]

Matrix	Level 1	Level 2	Level 3
Level of Participations	Informing	Involving	Collaborating
Level of Interaction	Feedback	Mediated Interaction	Direct Interaction

2.4 Social capital in art networks

Social capital refers to resources embedded in social networks [25] and provides a useful framework for examining how artistic collaborations generate value beyond aesthetic production. Putnam’s distinction between bonding capital (strong ties within groups) and bridging capital (weak ties across groups) [31] explains how art networks simultaneously reinforce internal cohesion and create external opportunities. This aligns with Granovetter’s theory of the “strength of weak ties” [18], which highlights how loosely connected actors can enable access to new resources and collaborations. In community art contexts, these dynamics emerge through shared practices that foster trust, collective identity, and civic engagement [19]. Participatory art exhibitions function as platforms for accumulating social capital [10], supporting bonding among participants while facilitating connections to wider artistic, institutional, and civic networks. This perspective highlights how exhibitions can produce social value through relationship-building, resource exchange, and community development.

3 Methodology

This study conceptualizes the exhibition as a co-created participatory infrastructure rather than a curator-led display. Building on studies that frames exhibitions as social infrastructures sustained through collective labor [34, 35] and as sites of collective memory-making and political expression [37], curation is approached as a relational practice embedded within community networks. Within this framing, participation is not treated as a uniform condition but as a set of differentiated roles and interactions that collectively shape the exhibition process.

3.1 Operationalizing Participation

To operationalize participation, this study adopts a two-dimensional participatory matrix derived from digital participation research [14] and informed by Arnstein’s *Ladder of Participation* [6]. Rather than re-evaluating participation conceptually, the matrix is used here as an analytical and organizational tool to structure the exhibition process. Participants engaged at different *levels of participation* (informing, involving, collaborating) and through different *levels of interaction* (feedback, mediated interaction, direct interaction), depending on their roles, capacities, and proximity to the exhibition site.

3.2 Technological Mediation and Readily Available Tools

Participation was supported through the use of RATs, which enabled scalable, low-barrier engagement. Familiar tools such as

smartphones, social media platforms, *Google Forms*, cloud-based document sharing, and commercial printing services were employed to minimize technical and financial obstacles [2, 13, 24]. These technologies facilitated mediated participation across geographic distances, allowing contributors to submit materials asynchronously while on-site coordinators managed printing, installation, and spatial configuration.

By relying on accessible technologies rather than bespoke platforms, the methodology prioritized speed, inclusivity, and adaptability. This approach was particularly critical given the time-sensitive and politically charged context of the exhibition, where rapid response and distributed coordination were essential. The technological setup thus functioned not merely as a logistical solution, but as an integral component of the participatory methodology, shaping how participation, interaction, and collaboration were enacted throughout the exhibition process.

3.3 Exhibition Setting

In September 2025, the research team organized a participatory exhibition in a repurposed school facility in Tokyo, Japan. This location was selected for its availability, affordability, accessibility, and its sufficient size to accommodate a large number of visual artworks. This physical exhibition has become a platform for artists to speak out against ongoing oppression without fear of censorship, serving as an alternative platform outside mainstream media, where censorship in Indonesia typically takes place.

3.4 Theme and Message

This exhibition was organized as a direct creative response to a period of intense political unrest and government censorship in Indonesia [21, 29, 46]. With mainstream media coverage limited and public protests escalating [3, 9], the project aimed to provide a safe, inclusive platform for non-violent expression.

The exhibition’s thematic core was built around emergent symbols of resistance, particularly the colors *Brave Pink* and *Hero Green*, which had become iconic within the movement (Figure 1) [9, 44]. This visual language was further extended by participating artists through metaphorical interpretations in their submitted works.

3.5 Actors, Roles, and Researchers’ Positionality

The participatory process involved five primary actor groups: coordinators (the research team), artists, volunteers, the gallery, and visitors. The researchers occupied a dual positionality as both coordinators and embedded researchers, participating directly in the exhibition where it unfolded across four phases of initiation, process development, implementation, and exhibition, as elaborated later in Section 3.6 and illustrated in Figure 2. This role enabled close observation of coordination dynamics, infrastructural breakdowns, and moments of collective message-making, while requiring ongoing reflexivity to balance facilitation with analytical distance.

3.6 Exhibition Phases

Rather than operating under a traditional curatorial, participation was organized through distributed roles aligned with four exhibition phases: initiation, process development, implementation, and

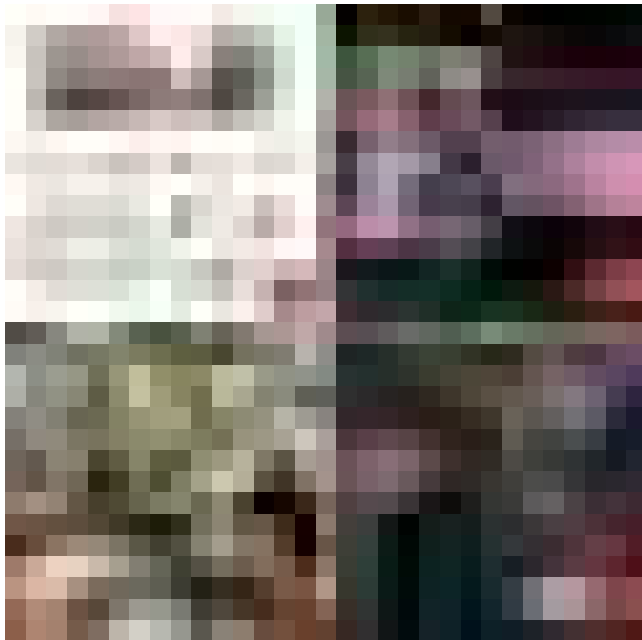


Figure 2: Phases of the exhibition. 1. Initiation; 2. Process Development; 3. Implementation; 4. Exhibition

exhibition. Table 2 summarizes how each actor contributed across these phases.

During **Phase 1: Initiation**, the coordinators developed the exhibition concept and secured a gallery venue that allowed immediate booking without extended institutional approval, an infrastructural condition critical for rapid response. In the **Phase 2: Process Development**, an open call was issued via social media platforms, enabling artists to submit works through a simplified *Google Form* while non-artist audiences self-organized as volunteers. **Phase 3: Implementation** involved collaborative deployment of printing, spatial setup, and digital coordination, followed by the **Phase 4: Exhibition**, where visitors activated the infrastructure by encountering, interpreting, and circulating the collective messages. Across all phases, the researchers' embedded role enabled ethnographic observation of how participation and collective meaning-making unfolded in practice.

3.7 Data Collection and Analysis

Data were collected with ethnographic approach, with researchers acting as coordinator-observers documenting interactions across physical and online exhibition contexts. Visual documentation, including photographs of the space, installation processes, and displayed artworks, as well as screenshots of online participation and social media engagement, were treated as analytical artifacts that reveal how participation and infrastructuring unfolded in practice. Post-event reflections collected through questionnaire segmented between artists and volunteers, and debriefings further supplemented the data [30, 38].

To examine participants' experiences and the effectiveness of the exhibition infrastructure, we distributed post-event questionnaires

to participating artists and volunteers. Hosted on *Google Form*, the questionnaires used readily available digital interfaces to minimize response burden while enabling speedy, anonymous data collection.

3.7.1 Post-exhibition Artist Questionnaire. Post-exhibition questionnaires were randomly collected from 135 participating artists to examine how the exhibition's infrastructural configuration supported participation. Artists were then asked to provide responses relating to their experience with the submission process, motivations for participation, perceptions of message conveyance, and willingness to engage in future participatory initiatives.

3.7.2 Post-exhibition Volunteer Questionnaire. Post-exhibition questionnaires were also collected from volunteers involved in organizing and implementing the exhibition to examine how infrastructural arrangements supported distributed coordination. Eight volunteers responded to the questionnaire. The questionnaire focused on volunteers' motivations for participation, experiences of coordination and task allocation, perceptions of infrastructural support, and reflections on what could improve future iterations of the exhibition.

Participation level was analyzed using a two-dimensional matrix that combines levels of participation and interaction (see Table 1). The analysis follows grounded theory principles laid out in the literature review, allowing thematic codes to emerge from engagement with the events rather than being predetermined.

4 Findings

4.1 Mapping Participations

The roles and involvement of each actor across these phases are summarized in Table 2. Artists primarily engaged through mediated involvement, contributing individual works that were integrated through shared standards and facilitation. Volunteers and coordinators occupied collaborative roles, engaging directly in coordination and decision-making processes. Gallery, being a place to display being on the same level as visitors participated through reception and feedback, activating the exhibition as a site of message circulation rather than production. This differentiated participation structure reflects an infrastructural approach that aligns levels of participation with actors' roles. Table 3 summarizes how participation was distributed across actors using the participatory matrix.

4.2 Enabling Distributed Participation through Infrastructural Alignment

Consistent with Star and Ruhleder's understanding of infrastructure as relational and embedded in everyday practice [42], participants reported that participation was enabled primarily through the alignment of familiar tools rather than through specialized or bespoke platforms. The use of RATs [2, 13, 24], particularly *Google Forms* for submission and social media for dissemination, was widely perceived as accessible. A strong majority of respondents described the submission process as *Very Easy* (84) or *Easy* (47), while only a small number reported difficulties (4), suggesting that participation was facilitated through infrastructural familiarity rather than technological novelty. However, language barriers may have affected participation, as submission forms were in English while most participants were Indonesian speakers.

Table 2: Actors, roles, and involvement across exhibition phases

Actor	Role	Involved Phases
Artists	Contribute visual artworks expressing personal and collective messages	Process Development, Exhibition
Coordinators	Configure participation infrastructure, coordinate processes, and conduct embedded research	Initiation, Process Development, Implementation, Exhibition
Volunteers	Support coordination, design, setup, promotion, and information aggregation through self-organized teams	Process Development, Implementation, Exhibition
Gallery	Provide accessible physical space and institutional support enabling rapid deployment	Initiation, Exhibition
Visitors	Encounter, interpret, and circulate collective messages physically and online	Exhibition

Table 3: Participation and interaction levels [14] across actors

Actor	Participation Levels	Interaction Levels
Artists	Involving (1)	Mediated (2)
Volunteers	Collaborating (3)	Mediated (2)/ Direct (3)
Coordinators	Collaborating (3)	Direct (3)
Gallery	Informing (1)	Feedback (1)
Visitors	Informing (1)	Feedback (1)

Within the participatory matrix (Table 1), artist participation primarily occurred at the *Involving* level through *Mediated Interaction*. Artists independently submitted their works, while their integration into the exhibition was facilitated by coordinators through shared standards such as format constraints and centralized printing. This reflects Star and Bowker’s argument that infrastructures rely on standardized classifications that often remain invisible during use [41]. The largely positive reception indicates that these standards were generally experienced as enabling rather than restrictive.

Artists’ reported motivations further illustrate how infrastructural arrangements shaped participation. Many respondents indicated that their primary motivation was to express socio-political concerns related to the situation in Indonesia, aligning with prior work on art as a form of non-violent expression under political constraint [7, 11]. Additionally, several highlighted the significance of having their work exhibited outside Indonesia, particularly in Japan. This suggests that geographic distance supported perceived safety, legitimacy, and visibility rather than acting as barrier, aligning with infrastructuring perspectives that emphasize access and institutional conditions over physical proximity [23].

When asked about how their messages were conveyed, most respondents indicated that their work was *mostly* (78) or *fully* (48) represented as intended, while a smaller number reported partial or limited alignment (9 in total). Rather than indicating alignment between intent and reception, these responses suggest that the infrastructure sufficiently enabled expression within a standardized, rapidly deployed exhibition, consistent with infrastructuring as enabling participation without prescribing outcomes [23].

Finally, 71 respondents explicitly indicated that they would participate again in a similar initiative. This willingness to re-engage points to the potential continuity of participation beyond a single event, echoing Selloni’s framing of co-design for public-interest services as infrastructural work that supports sustained engagement [39].

In contrast to artists, volunteers primarily operated at the *Collaborating* level of participation, engaging through a combination of *Mediated* and *Direct Interaction* across the process development, implementation, and exhibition phases. Volunteers reported that coordination and task allocation were generally manageable despite the rapid timeline and evolving scope of the project. Communication through familiar platforms enabled rapid information exchange, ad-hoc problem solving, and role negotiation across teams. This aligns with Star and Ruhleder’s emphasis on infrastructure becoming visible through use, particularly when coordination depends on ongoing adjustments rather than fixed procedures [42].

Several respondents noted that the absence of rigid role definitions allowed flexibility in responding to emerging needs, while also creating moments of ambiguity regarding responsibility and workload distribution. These reflections suggest that infrastructuring in this context involved balancing openness with coordination, consistent with Karasti’s framing of infrastructuring as ongoing work rather than the delivery of a finalized system [23]. Infrastructure was experienced not as a stable backdrop, but as something enacted through collective effort, communication practices, and mutual adjustment.

Despite these challenges, volunteers expressed willingness to participate again in similar initiatives, indicating that the infrastructural arrangement supported not only task execution but also a sense of shared ownership and commitment. This willingness mirrors Selloni’s argument that co-design and public-interest initiatives can foster continuity when participation is structured around enabling conditions rather than tightly specified roles [39]. While the small number of respondents limits generalization, these findings suggest that readily available technologies and flexible coordination practices can support collaborative participation under conditions of urgency.

4.3 Emergent Social Capital and Collective Message-Making

Beyond the production of visual artifacts, the exhibition generated social value through shared meaning-making and relational ties. This reflects a form of collective participation in which outcomes are shared rather than co-produced at an interpersonal level.

Artists’ reflections indicate that individual expressions were situated within a broader collective context. Respondents emphasized communicating shared political concerns and valued the visibility of



Figure 3: Social media reposts and responses from the participants will be conducted through *Instagram*, using an assigned template, direct messages, and participants' Instagram stories.

their work alongside others. While artworks were not co-produced, the infrastructural arrangement enabled a collective statement.

Social connections extended beyond the exhibition through documentation and circulation on social media, where artists engaged in reposting and commentary (Figure 3). These interactions resemble the formation of weak ties [18] and align with social capital as network-embedded resources [25]. Willingness to participate in future initiatives suggests relational continuity enabled by infrastructured participation rather than isolated engagement.

5 Discussion

5.1 Reusability of Infrastructure

This research suggests that participatory exhibitions can function as reusable infrastructural units for collective message-making, but that participation dynamics are shaped by the affective framing of the exhibition. While political anger enabled rapid, high-volume participation under conditions of urgency, it remains unclear whether the same infrastructural configuration would support similar levels of engagement when centered on other emotions such as grief or joy. Rather than assuming affective universality, emotion may act as an infrastructural variable that interacts with timing, coordination, and perceived safety. Future work will deploy the same infrastructural unit across exhibitions organized around different emotional registers to examine how participation volume, interaction patterns, and coordination demands shift, thereby testing the limits and expandability of rapid-response participatory infrastructures.

5.2 Implications for Participatory Design Research

This study highlights three implications for participatory design research and practice. First, it demonstrates the potential of *frugal infrastructuring*, showing how RATs and low-cost material constraints can enable large-scale participation without complex platforms. Second, it illustrates the viability of *rapid-response participatory frameworks*, expanding PD's applicability to urgent socio-political contexts. Finally, the replication of the exhibition model by external communities points to the importance of designing for *transfer of ownership*, where participatory infrastructures can be adapted and sustained beyond the original intervention.

5.3 Limitation

This study provides insights into infrastructuring participatory exhibitions as platforms for collective messaging, but several limitations should be noted. First, the exhibition's specific focus on Indonesia's political context, including the themes, emotions implied, and symbolism used, may limit its applicability to other environments. Consequently, in this specific exhibition, the message may not translate well to the local audiences in Japan, and reduced its potential impact as a truly cross-cultural platform. Second, as the exhibition's rapid response nature captured immediate reactions to political events, its long-term sustainability of the networks formed and the message conveyed was not tracked. The short-term focus leaves questions about how such participatory models might evolve or maintain relevance over time. Third, while the exhibition model proved replicable, as it offers repeatable logic for participation and re-creation, it does not prove standardize in practice. While core infrastructures remain stable, meanings and participation dynamics are shaped by local conditions. What is replicated is not outcomes, but the conditions for collective expression.

Future research could explore how this model can adapt to different cultural contexts and how the collective messaging evolves through sustained, long-term participatory exhibitions.

6 Conclusion

This exhibition illustrates the potential of participatory design as a message-conveying platform and political act. By leveraging RATs and reframing Coordinators as enablers rather than curators, the project enabled inclusive, large-scale participation and authentic collective expression against unrest socio-political conditions and censorship. The deliberate removal of curatorial intervention allowed artists' voices to emerge unfiltered, reinforcing the exhibition's role as a platform for resistance and peacebuilding. Significantly, the project demonstrates that scalable, rapid-response participatory frameworks are possible through frugal infrastructuring. While limitations remain, such as non-replicable theme and limited local engagement, the model provides a compelling case for how design can redistribute power, generate social capital, and activate civic discourse.

Participatory exhibitions, when intentionally structured, not only democratize art-making but also serve as platforms for political and social transformation. This work urges Participatory Design to embrace its political stakes and design for long-term ownership and impact.

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Building Participatory Design Competencies for Designing Dialogue

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Abstract

Participatory Design (PD) pedagogy is increasingly recognised by researchers and practitioners as a practice that reframes the relationships between instructors and students, fostering more collaborative and reflective learning environments. Empirical experiences have contributed to expanding the body of knowledge on the limitations and competencies that educators must address when teaching PD. This paper seeks to advance existing discussions on experimental approaches to PD education, with a particular emphasis on developing students' competencies in designing dialogic processes with others. We argue that fostering approaches centred on dialogue can better equip future designers to engage with interconnected and complex systems, such as those related to peace and conflict. By encouraging listening, dialogue, and debate within design education, we promote the cultivation of a design culture oriented toward empathy, collaboration, and ultimately, a future of peace.

Keywords

PD pedagogy, Dialogue, Peace & conflict, Design education

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1 Introduction

1.1 Participatory design pedagogy

Participatory Design (PD) pedagogy is increasingly presented by researchers and practitioners as a practice that reframes the relationships between instructors and students. Previous experiences have approached PD pedagogy through different processes. D'Andrea and Teli [1] describe their experience of engaging students throughout the entire process of defining their own courses. This is an approach that allows students to take an active role in setting their learning objectives and directly experiencing the practices and principles of PD.

More recently, D'Andrea et al. [2] propose an exploration of different case studies on PD pedagogy, highlighting the significance of mutual learning and reflection-in-action within academic courses. This pedagogical approach promotes a process in which instructors guide students through the fundamental dimensions of PD, categorised into four main areas: the development of social awareness and critical thinking; the role of workshops and the materiality of their facilitation; the creation of opportunities and spaces for reflection; and the analysis of the resulting outputs.

Although using different methodologies, both PD pedagogical approaches propose processes that promote diverse relationships between instructors and students, shaping activities around dialogue, mutual collaboration, and ongoing feedback. The former approach guided students through a more structured path towards PD, whereas the latter one involved students through the formulation of the entire course. D'Andrea and Teli [1] highlight how instructors can redefine their participation within the courses by accompanying the exploratory process of students, without losing the pedagogical direction and the learning goals of the courses. These empirical experiences support the literature knowledge around the possible limitations and the skills that must be strengthened while teaching PD.

In this paper, we present an educational workshop that integrates dialogue with mutual learning and reflection between students and

professors. The workshop invited participants to contribute to the design of dialogues for peaceful ecosystems, through processes of self-awareness and developing relationships with peers, instructors, and external mentors. Although interactions with external participants were limited, exchanges within class enabled students to actively cultivate a participatory design mindset, one that is crucial to develop at early stages of learning about PD practices [3] and to effectively engage in participatory design with confidence. More specifically, the current work aims to advance the existing body of knowledge on experimental PD teaching approaches, with a particular focus on building competencies for designing dialogic processes with others [4]. We argue that fostering approaches centred on dialogue can better equip future designers to engage with interconnected and complex systems, such as those related to peace and conflict.

1.2 On ecosystems of peace

The underlying causes of conflict and violence vary around the world, yet some shared characteristics may be identified across different countries. The following is a non-exhaustive list of some of the most common conditions. The first condition is contingent upon the availability of limited resources. While previous centuries were marked by a feeling of power from resource exploitation, the 21st century has demonstrated that critical resources for human survival are finite in nature. The control of territories with abundant natural resources has been identified as a primary cause of contemporary violent conflict. This phenomenon is intricately linked to climate change, which has exacerbated the conditions leading to crisis, resulting in a diminution of resources and habitable environments. Finally, these two issues are exacerbated by the inequality and injustice which characterise current societies, marked by economic disparity, racism, sexism, homophobia, religious intolerance, and more [5].

Within this context, it is imperative to acknowledge the distinction between violence and conflict. Most human interactions are characterised by conflict, which is intrinsic to human society and to our daily actions, but not inherently detrimental. The problem with conflict arises when it escalates to the point of personal or structural violence. Indeed, societies should not envision an idyllic state of peace without conflict [6], but rather a state of coexistence between diverse beings, knowledge, and beliefs.

In this world marked by persistent violence, the pursuit of peace can appear utopian. Johan Galtung, a founder of peace studies and research, defined peace in terms of a positive/negative dichotomy: Negative peace focuses on the absence of war, whereas positive peace encompasses desirable mental and societal states, such as harmony, justice and equity [5]. Despite the challenges of achieving consensus among peace studies researchers, Galtung asserts that peace must be both attainable and actionable, encompassing not only the absence of personal violence, but also the enhancement of social justice. Potential outcomes of this effort could include non-violent actions, new theories of development and organisation, ideas for participation, decentralisation, and co-decision [7].

1.3 The role of dialogue

Dialogue can be defined as a process of inquiry which explores the beliefs and assumptions held by individuals and communities.

When considered as a sustained experience, dialogue has the potential to spark the creation of new collective meanings and personal change [8]. In the context of Participatory Design (PD) pedagogy, this approach to dialogue can help future designers in their work on interconnected and complex systems, such as those involving peace and conflict. Training students with PD skills, such as listening and dialogue, is of critical importance if cultural shifts in society and design practitioners are to be achieved.

In this context, we asked ourselves what the role of PD pedagogy could be in training designers with PD skills, such as dialogue, for peacebuilding. We take the premise that PD education can encourage listening, dialogue, and debate among students, thus promoting a future culture of peace.

The workshop supported students in transitioning their design practice beyond solutionism and focusing on processes that encompass dialogic, relational and situated practices, integral to cultivating a culture of peace. We proposed a design process that, instead of starting from a design brief, started from dialogue between themselves. This dialogue generated debates and problems, which sparked action and the development of ideas. At the same time, the dialogic process provided students with the PD skills to listen, debate, and start conversations in their future practice of design.

The first edition of the workshop was an experimental exercise for the teaching staff and students alike. Without a design brief, there were no anticipatory premises for the expected outcomes. This enabled the teaching team to explore the problem framing and idea generation phases together with the student.

2 Methodology

The pilot, titled “Designing Dialogues for Peaceful Ecosystems”, was organized by Politecnico di Milano’s School of Design, in collaboration with Aalto University and Delft University of Technology, as a Blended Intensive Program, thus allowing for the participation of an international community of teachers and students. Ultimately, 62 students from ten different higher education institutions located in nine countries joined the pilot. Participants’ backgrounds ranged from diverse design specialities (industrial, communication, interaction, services...) to related disciplines such as engineering, architecture, arts history, business strategy and technology. The experience took place at Villa Grumello, a historic villa on the shores of Lake Como in Italy.

The program consisted of two parallel five-days-workshops revolving around the concept of peaceful dialogue, aligned with SDG16. The first one, titled “Listening Devices”, led by Prof. Andrea Botero (Aalto university) focused on the act of listening [9]. The second one, titled “Between Yes and No”, led by Prof. Ingrid Mulder with Rebecca Price (Delft University of Technology), stressed the importance of giving space, in debates, to intermediate positions between polarities.

In addition to the workshop setup, the program also included a set of preparatory activities held both online and in person. Online lectures were organized to contextualize the concepts of peace, dialogue and coexistence, while in-person field trips and visits were arranged for participants to get to know each other before diving into work.

While diverse in terms of the perspective on dialogue analysed, both workshops shared four pedagogical principles.

2.1 Peer to Peer centred learning approach

This pedagogical pillar reflects one of the principles of Experiential Learning defined by Kolb & Kolb [10], which places differences among people as one of the main drivers of the learning process. As participating students were characterized by diverse cultural and disciplinary backgrounds, the program encouraged many peer-to-peer occasions for discussion, conversation and debate. Moreover, we aimed at fostering the diversity in educational approach adopted by sending institutions (some with a more technical / scientific core, while others with a more artistic), encouraging students to adopt and adapt practices and techniques from their own academic experiences.

Rather than “centralizing” the learning experience [4] on one educational perspective, provided by and drawn from the teacher’s knowledge and experience [5], “horizontal” learning opportunities were encouraged through teambuilding policies (working groups for both workshops were created combining students from different disciplines, universities, and cultures) and by planning peer to peer encounters among working groups and across workshop classes.

2.2 Hands-on, analogue work

As the program took place in a historic villa, away from the hustle and bustle of the city, a more hands-on, analogue work-approach was preferred to the more digital, computer-based way of designing that characterizes most educational environments nowadays. This choice was made in accordance with the concept that learning is a process that takes place in a given context, at a given time [11]. Although the Contextual Model of Learning frames three dimensions of contextual relevance: personal, socio-cultural, and physical, it is the physical one that is particularly relevant for this pedagogical pillar. Adopting a working approach that could reflect the natural spaces in which we were situated, as well as its spatial constraints (limited table space, slower internet connection) was considered just as relevant for the learning experience as the design process and working theme.

The workshop setup scaffolded the students’ exploration process as well as guided them in presentation and storytelling of their proposals. Computers, phones and other digital supports were nonetheless allowed throughout the experience.

2.3 Participatory approach

When discussing participatory approaches in educational and/or design contexts, it is most common to think of designers who work together with the final users or with system stakeholders on their design proposal. In the context of “Designing dialogues for peaceful ecosystems”, we included the participatory approach as a pedagogical pillar from a slightly different perspective: as dialogue consisted of the centre point of the experience, participation also took a more dialogical perspective. Instead of pushing novice participatory designers to meaningfully engage people in the middle of a conflict, a complex endeavour even for seasoned participatory designers, not to mention ethically questionable; the workshop facilitated encounters with people directly involved in the peace system. Such

encounters took the form of conversations with “mentors” (e.g., journalists, humanitarian aid workers, academic researchers, designers with experience in the area...) with intimate knowledge of some of the challenges. The goal of this practice was to experience first-hand the challenges of dialogue, offering reflections from different disciplines, different competencies, perspectives, needs, and languages.

2.4 Lack of solution-oriented brief

Lastly, neither workshop provided students with a project brief. At the beginning of each experience, the topics of exploration (listening and intermediate positions), both professors presented the theoretical background behind each concept and introduced a challenge: to produce a listening device for the first workshop, and to give space to an intermediate position between two polarities for the second one. Working groups were able to frame their thematic area of intervention through dialogue, self-defining the thematic space in which they would work based on the sensibilities, interests, and cultural backgrounds of each group member.

The choice of only providing a guiding principle (that of creating a listening device or giving room to an intermediate position) rather than a design brief, aligns with a growing sentiment in the design discipline that calls for a re-focus towards design as a practice of sense making rather than a tool for problem solving, particularly when addressing complex societal issues [12]. Moreover, when discussing complex topics such as dialogue, peace and coexistence, a problem-centric perspective risks being exclusive rather than inclusive, in the sense that designers and teams might favour one position to achieve their goal and “solve the issue” rather than focusing on addressing its complexity.

Traditionally, design education provides student with tools, steps and guidelines [13], nonetheless this has proved not enough to educate design professionals: as Tovey [14] states, “design students can become fixated and stuck within the design process” (p. 2744), moreover it has become crucial for growing designers to master not only tools, but also develop a specific design culture [15] that can complement their technical knowledge.

As experiential learning has been proved to be an effective approach to design education [16, 17], experiencing PD practices firsthand, by removing the “pressure” generated by the traditional steps of design process and the need to “fill up templates”, was deemed as the most effective way to encourage the development of students PD awareness.

Even though, the current program setup was an experimental pilot, the pedagogical principles, are grounded in theory. Our research goal was to evaluate the proposed setup and study the impacts on young designers. To enable the evaluation of the experience, its impacts and areas of improvement, we rely first on our participant observation insights from the course (gathered during the week and in a joint debriefing session immediately after the workshop, which we collected in a narrative report). We also analyse and evaluate the design outcomes generated by the students at the end of the program.

Our data collection is complemented by responses gathered from students through two questionnaires: a first one before the start

of the in-person component of the experience, centred on understanding expectations (26 out of 62 participants); and a second one, administered after the end of the program, focused on evaluating the experience and its impacts, more specifically in relation to the role of dialogue in design (15 out of 62 participants). The responses gathered through the two forms, although not statistically significant, provide us with an additional entry point to their expectations and experience.

3 RESULTS

Student projects resulting from the two parallel workshops covered themes of interest to students, including migration, free speech, food heritage, abortion, environmental sustainability, the need for silence, gender biases, and more. For the current paper, the research team organised the projects in a matrix that combines the goal of dialogue for the project and the level of participation required to achieve the project's objectives efficiently (see Fig. 1). As dialogue involves discussion and listening, we argue that it can be carried out individually or collectively.

Additionally, drawing on Richard Sennett's *Together: The Rituals, Pleasures and Politics of Cooperation* [18], we categorised projects according to the purpose of the dialogues they propose. Sennett distinguishes dialectic conversations, which mediate between opposing positions to reach an agreement that excludes alternative views, from dialogic conversations, which are open-ended and value the process of exchange over the outcome. Interpreting this framework in the context of the workshop, we positioned projects along a Goal of conversation axis, ranging from dialectic to dialogic. In the dialectic domain, dialogue integrates divergent perspectives (e.g. intergenerational exchange) to establish a shared ground. In the dialogic domain, dialogue functions as critique or reflection (e.g. the experience of immigration), foregrounding questions and enabling multiple interpretations and unforeseen viewpoints.

Figure 1 presents the matrix of projects. The red colour highlights projects from the "Between Yes and No" workshop, and the blue colour highlights projects from the "Listening Devices" workshop. The matrix shows that projects focusing on individual participation allow less scope for dialogue between different perspectives, whereas projects involving collective participation have a stronger cooperative objective. Moreover, it is evident that projects under the "Listening devices" section predominantly adhere to a dialogic conversation approach, while those under the "Between yes and no" section primarily follow a dialectic conversational approach. However, the Collective Participation + Dialectic conversation and Individual Participation + Dialogic conversation quarters, show an overlap among projects from the "Listening Devices" and "Between Yes and No" workshops.

The overlap arises from discussion with the students during the workshop and from internal discussions during the categorisation of the matrix. These discussions covered the requirements for considering some experiences as dialogue and the participants' role in informing the goals of conversations.

Some questions arising from these discussions, that we are leaving open for this initial exploration, are: Who are we listening to? According to our definition, dialogue explores the beliefs

and assumptions of individuals and communities [8]. Differently put, is there dialogue when having conversations with more-than-humans? Can we also consider conversations with ourselves to be a form of dialogue? Are there other beliefs and assumptions involved in our inner thinking? Some students also explored the importance of silence in our daily lives. Could we consider a dialogue to be taking place in a silent environment?

4 DISCUSSION

In this section, we discuss the responses provided by the students in the survey at the end of the workshop. The survey focused on the workshop's contribution to changing perceptions of dialogue in design, generating safe spaces for participation, and encouraging reflection on ecosystems of peace and coexistence. Although the survey responses are not representative of the entire student group, they provide valuable insights for the teaching staff, helping them to understand the limitations and motivations for future editions of the workshop as well as offering initial directions for future research on the topic.

Students' feedback highlighted how this educational format encouraged their interest in participation and dialogue within their design practices. They expressed increased confidence in initiating and engaging in meaningful dialogue, feeling a stronger grasp of the vocabulary and concepts surrounding it, thus helping them to articulate its value more clearly. The experience helped them to understand dialogue as a complex, ongoing process rather than something to be "solved," thus implementing this approach also in their design projects. Indeed, their final ideas aimed to avoid a solutionist approach, focusing rather on a mindful and intentional design process that could listen to new perspectives and to amplify the voices of those who have been kept silent.

Overall, participants felt that the program was effective in creating a safe environment to discuss coexistence and dialogue, highlighting the welcoming and peaceful atmosphere, the facilitating role of professors, and the activities that encouraged embodied and respectful dialogue. These aspects fostered open sharing and provided students with practical knowledge to listen and contribute more effectively. However, while the foundation for a safe space was clearly established, a few participants felt that deeper engagement and reflection could have further enriched the experience.

By the end of the workshop, participants recognised a strong connection between dialogue and design. Many described dialogue as a critical element of the design process, essential for understanding diverse perspectives, fostering inclusivity, and creating more thoughtful projects. Some students mentioned how the experience made them more courageous and intentional in engaging in dialogue, highlighting also the importance of listening and expressing their positionality, especially when working in social and systemic design. While some noted that dialogue might seem less central in traditional product or graphic design, they still valued it as a critical soft skill.

Finally, regarding the personal impact of the experience, students claim to be more aware of their surroundings, their listening habits, and the dynamics of group interaction, such as the influence that sharing their opinion can have in the willingness of others to share as well. They appreciated the opportunity to work with their hands,



Figure 1: Matrix of projects categorised by Type of participation and Goal of conversation

generate emotional connections with professors and other students, and express themselves, particularly in a second language. Overall, they appreciated how, despite coming from a variety of backgrounds and perspectives, they could discover a shared design mindset that led to varied and creative outcomes.

5 CONCLUSIONS

It can be concluded that the workshop opened discussions about the meaning of dialogue within PD pedagogy and practice. For a start, the way dialogue was employed in the projects differed from our original definition of dialogue. The students' projects approached PD in many ways, involving games, food, exhibitions, the agency of non-human entities and even silence. This opened the door to imagining new forms of dialogue involving alternative communication channels, interlocutors and agencies. Perceptions

of dialogue differ when we consider the conversations we have during moments of silence or when we pay close attention to plants and the ecosystems around us.

Furthermore, when considering their role as designers, the students claimed to understand dialogue from different perspectives. Firstly, an ethical responsibility to include and amplify the voices of those who have been silenced. Here, students recognised their role as designers within power structures where dialogue plays a critical role. Additionally, awareness can only develop when the design process allows enough time for listening and paying attention, making designers more aware of their surroundings and other realities. Finally, a type of dialogue that requires courage and intention, which demands that designers participate and open spaces for others to participate as well.

Students appreciated the move away from the solutionist approach, developing ideas that encourage people to embrace ambiguity and discomfort. They recognised that peace will never come from eliminating conflict, but rather from learning to coexist with difference without fear.

In terms of future PD pedagogy and future editions of the workshop, the challenge remains to imagine how modifying variables relating to location, teaching staff or students' backgrounds could impact the process and outcomes. We conclude with four takeaways to foster dialogue, participation and reflection in PD education:

- Workshops, especially those taking place in non-academic contexts, benefit from an analogue environment that enables students to think with their hands and establish real-life connections with their peers and instructors.
- Participant's intrinsic motivation in the topic is crucial and cannot be underestimated.
- Dialogue is easier without power hierarchies: traditional lectures, which divide professors and students into different roles, decrease the fluidity of conversation. Workshops held outside of the university spaces and with external participants can encourage participants to engage with the space and learn together on more equal footing.
- A future challenge will be to facilitate open debates on controversial topics while maintaining a safe environment in which everyone can participate. In this regard, it is vital to have instructors who can facilitate and mediate these processes.

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Participation through Designing Relations with People, Materials, and Place

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Abstract

In times of growing disconnection, the *Sensorial Design Residency* offered a situated context for reimagining participation. Held in Tallinn, Estonia, and co-organized by the Estonian Academy of Arts (EKA) and Ontario College of Art & Design University (OCAD U), this two-week international residency brought together emerging artists and designers from diverse cultural and disciplinary backgrounds to explore the theme *Analogue+Digital=Sensorial*. This paper reflects on the residency as a live pedagogical experiment that foregrounded care, improvisation, and shared presence over predefined outcomes. It positions participatory design as a practice of holding space: for plurality, for ambiguity, and for the unfinished work of living and learning together. Drawing on sensory ethnography, relational design theory, and post-humanist pedagogy, we examine how participation unfolded not as a step in a process, but as a collective condition of becoming shaped by space, friction, materiality, and difference. By foregrounding participant voices and material encounters, this paper shows how open-ended, sensorial practices enabled plural forms of knowing. These insights contribute to participatory design discourses seeking to center emergent voices by illustrating how open-ended, sensorial, and relational practices allowed participants to express themselves beyond outcome-driven frameworks. In the residency, participants negotiated meaning through materials, gestures, and shared presence creating space for diverse cultural, disciplinary, and affective ways of knowing. In doing so, the project reframes participation as a condition of mutual learning and cohabitation rather than a tool for consensus or control.

CCS Concepts

• **Human-centered computing**; • **Interaction design**; **Interaction design process and methods**; **Participatory design**;

Keywords

Relational participation, design residency, participatory design, cross-cultural collaboration, sensorial design

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1 Participation as a relational practice

Design education is shifting from transmissive, problem-solving models toward relational and situated approaches that attend to social, political, and ecological entanglements. In response to global conditions of fragmentation and inequity, educators and practitioners are reimagining design not primarily as innovation or solution-making but as a way of sensing, dwelling, and co-existing with others—human and more-than-human [1] [2]. Within this evolving landscape, participation, place, and post-humanist pedagogies have become central to reconfiguring design learning, especially in cross-cultural and interdisciplinary contexts [3] [4] [5].

This paper contributes to that conversation by examining participation not as a procedural step but as a situated condition of *learning-with*—marked by improvisation, care, and transformation. It draws on our role as co-facilitators and embedded researchers [6] in the *Sensorial Design Residency*, co-organized by Estonian Academy of Arts (EKA) and Ontario College of Art & Design University (OCAD U). Held in Tallinn, Estonia, in August 2024, this two-week residency brought together twenty-five emerging artists and designers across ceramics, textiles, visual communication, environmental, and digital design. Organized into eight interdisciplinary teams, participants explored the thematic provocation *Analogue+Digital=Sensorial* through shared material experimentation and collective reflection.

Rather than positioning the residency as a model to replicate, we approach it as a live pedagogical experiment, an unfolding environment shaped by spatial dynamics, group rhythms, and emergent relations. The residency served as the first case in a broader doctoral inquiry asking how participatory design can foster relational practice through place, space, and play. Here, we focus on one sub-question: *How does participatory design unfold as a relational practice within a cross-cultural learning space?*

The case study provides situated insights that not only respond to this sub-question but also inform the next case study as well as partially address the main research inquiry, surfacing practices of inclusion, negotiation, and co-sensing that resonate across broader participatory design contexts.

This paper contributes to ongoing participatory design debates by reframing participation in design pedagogy as holding space: a

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facilitative and spatial practice that sustains plurality, unevenness, and unfinishedness rather than steering toward consensus or deliverables. Empirically, we show how participation becomes legible through (1) cross-cultural epistemic tensions (different assumptions about critique, autonomy, and making), (2) material and environmental agency that redirects collaboration, and (3) infrastructuring practices (rituals, shared rhythms, informal supports) that enable learning-with across difference. Methodologically, we operationalize “holding space” as an analyzable construct by tracing how it is enacted through facilitation moves, spatial arrangements, and participant adaptations over time.

1.1 Pedagogical framing and role of facilitation

The residency was structured to support collaborative learning across cultural, disciplinary, and material differences by treating making not only as output but also as inquiry. Our facilitation emphasized holding open space rather than directing outcomes encouraging autonomy, improvisation, and care through daily check-ins, shared meals, and embodied presence in studios and informal settings. This facilitation approach enacted what Akama et al. call relational infrastructures for participation [21]: subtle scaffolds that sustain co-presence and trust.

Ethics approval was obtained through both institutions. All participants gave informed consent, and data, including journals, photographs, and interviews were anonymized and stored securely in line with data-protection regulations.

1.2 Research approach and methodology

This study draws on Research-through-Design (RtD) not as the production of a singular artefact, but as a practice-based methodology for knowledge generation through relational, spatial, and material engagement [9] [10] [11]. As co-facilitators of the *Sensorial Design Residency*, we did not design artefacts ourselves but designed the conditions for participation to unfold through curating prompts, structuring rhythms of the residency, navigating interpersonal dynamics, and attending to how environments shaped interaction. Our facilitation became a form of placemaking-as-method, where co-presence, improvisation, and situated responsiveness produced insights about participatory design in practice.

We adopt a sensory ethnographic lens [4] [12], which means that we did not only observe participants’ outputs, but engaged with affective atmospheres, bodily encounters, and informal rituals as generative to both learning and data. These included the shared meals, pacing of walks, studio gestures, and moments of rest. Our data was not just gathered; it emerged through our presence and attunement to these rhythms.

Data sources included facilitator observation notes and photographs, participant journals and Padlet archives, mid-point and final presentations, and post-residency interviews. Analysis followed an axial coding procedure: initial open codes were developed from fieldnotes and participant writings, then iteratively compared across data sets to identify recurring patterns. Three thematic clusters emerged, *Space and Rhythm*, *Improvisation and Friction*, and *Collaboration and Care*, which structure the following sections. We treat the residency not as a backdrop for data collection but as a designed participatory infrastructure. This is operationalized in

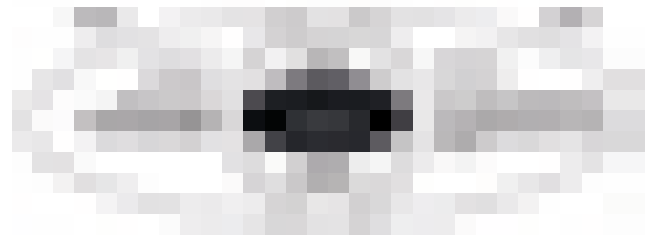


Figure 1: Adapted from Krogh and Koskinen’s *Knowledge Relevance Model* (2020) [40], this framework illustrates how knowledge emerges and gains relevance through iterative design experiments. At the center lies the act of designing—positioned as an evolving “conversation with the material” [38] that bridges theoretical inquiry and applied relevance. [Illustrated by the first author]

three ways: (1) facilitation-as-method (designing rhythms, prompts, and care practices as research interventions), (2) space-tracing (linking shifts in participation to specific sites and transitions between them), and (3) sensory evidence (attending to gesture, atmosphere, and material resistance as data rather than context).

Through this methodology, we examine participation not as a bounded method but as an emergent condition co-produced through space, material, and relation.

2 Situated participation

Participatory Design (PD) has long been framed as a democratic practice, an invitation to inclusion, equity, and shared authorship [3] [13]. Yet, such framings can obscure the affective, spatial, and relational tensions that make participation both fragile and generative [14] [21] [30]. Following Light’s notion of affective prefiguration [2], we approach participation not as a stage or tool but as an emergent condition enacted through co-presence, improvisation, and encounter.

Unlike structured PD residencies or living labs that emphasize stakeholder co-design and measurable outputs [3] [21], the *Sensorial Design Residency* foregrounded relational emergence, bodily attunement, and improvisational learning. This distinction reframes participation as an embodied practice of learning-with—where difference, uncertainty, and friction become central to how collaboration unfolds.

During the first days, participants often described hesitation and misalignment. CG reflected, “We started with very few expectations... we were open about how we felt and connected through our current positions in life too.” Early uncertainty became a resource for dialogue and mutual orientation. Rather than aiming for consensus, participation unfolded through sensory and emotional negotiation—through movement, listening, and reflection. Journaling, quiet hours, and check-ins functioned as collective grounding rituals. NJ and ER wrote that these practices “helped us find new approaches and enhance creativity.”

These accounts illustrate participation as a relational rhythm, a process of sensing when to pause, when to act, and when to listen. Group 6’s daily forest walks exemplified this: “We started

participating by listening to the space,” one member said. Such embodied drifting resonates with Gruenewald’s Critical Pedagogy of Place [16] and Hjorth & Lammes’ concept of playful method assemblages [17], where co-sensing and environmental attunement replace directive coordination.

Yet participation also revealed structural and emotional asymmetries. ER noted, “The design jargon and digital expectations made it difficult to contribute as I hoped.” PS, balancing childcare and work, questioned her belonging: “Between responsibilities, I couldn’t stay for everything.” These reflections complicate celebratory notions of inclusion. They foreground participation as a negotiation shaped by time, access, and institutional support, what Light and Akama call the politics of care [30].

As facilitators, our role was to hold space for these frictions rather than resolve them. Participation was therefore not evenly distributed or universally accessible; it was carried through pauses, gestures, and affective attunements. ZB, whose group developed a *Sensorial Rubik’s Cube* for colour-blind users, described how “removing colour made the puzzle drastically unfamiliar... slowing down perception became part of the point.” Such slowing and disorientation enacted an ethic of staying with the trouble [29], transforming friction into a mode of learning.

These moments exemplify what Savransky and Lundy call an “ecology of perhaps” [18]: value and meaning emerging through open-ended relational processes rather than predefined outcomes. Within this ecology, participation becomes a form of *prefigurative affect* [2], a way of “feeling forward” into alternative modes of togetherness, even if temporary.

In this sense, participation is not a discrete step in a project but a distributed, ongoing condition of co-existence. It is negotiated through uneven capacities, embodied sensitivities, and shared care. Analytically, this means participation can be studied as a set of conditions, how space is arranged, how facilitation distributes attention, and how differences are negotiated, rather than as evidence of inclusion alone. Friction, uncertainty, and improvisation are not obstacles but pedagogical forces that shape collective learning.

Through the residency, participants enacted participation as mutual attunement: crafting relations across difference, materiality, and space. This situated understanding extends PD pedagogy beyond procedural inclusion toward an ethics of responsiveness, where participation is lived as rhythm, relation, and shared vulnerability.

3 Space and place as pedagogical actors

Space in design learning is never a neutral backdrop; it actively participates in shaping relations, tempos, and possibilities for collaboration [4] [19]. During the residency, participation unfolded across a constellation of sites, university studios and corridors, dorm kitchens, city streets and forests, and the industrial exhibition hall. Treating these sites as pedagogical actors clarifies how material affordances and atmospheres co-produced distinct modes of participation.

3.1 Making space, making place, making sense

Early in the residency, institutional spaces at EKA offered orientation and legitimacy. Studios (ceramics, leather, e-textiles, digital



Figure 2: Participants attending presentations in the leather design studio. [Photographed by the authors]



Figure 3: The three stages of transforming a space to a place to make sense by Leurs, Schelling, and Mulder (2013) [17]. [Illustrated by the first author]

prototyping, digital weaving, VR) afforded tools, safety norms, and tacit scripts for getting started. Rather than neutral containers, these spaces acted as relational infrastructures that supported threshold encounters, passing conversations in corridors, peeks into adjacent benches, and impromptu demonstrations that seeded cross-team curiosity [21].

In Leurs, Schelling, and Mulder’s terms, participants moved from making space (occupying available rooms) to making place (attributing meaning through shared routines) and ultimately making sense (deriving significance from situated experience) [20]. We observed this shift as groups personalized benches, pinned tests on walls, and scheduled their own check-ins: the environment thickened into a place of belonging.

Several teams extended place-making beyond studios. Group 3 collected clay from Tallinn’s shoreline and braided human hair into offering vessels, artefacts that carried memory and encounter into the work. Another participant, NI, described building “a cave in the sand,” emphasizing how bodily attunement to terrain guided decisions. Such episodes illustrate how co-sensing with materials and site transforms generic space into lived place, aligning with place-responsive pedagogy [16] [19].

3.2 Making space, making place, making sense: Attunement, improvisation, and emergence

As confidence grew, spatial practice became improvisational. Group 6 instituted daily forest walks to “listen to the space,” gathering leaves and soundscapes that later structured an audio installation. These rituals enacted what Hjorth & Lammes term playful method assemblages, co-present, exploratory routines that privilege rhythm



Figure 4: Some of the city environments and atmospheres that the participants experienced during the residency. [Photographed by the authors]

over directive coordination [17]. Informal sites, balconies, stairwells, dorm kitchens, were equally consequential. Shared meals and late-night conversations lowered stakes, enabling participants to voice doubt, renegotiate roles, and acknowledge care needs. AT noted that “hanging out after class” made expressing concerns easier, indicating how hospitality practices support affective participation.

Spatial frictions also surfaced the politics of access. Transporting work to the off-site venue proved taxing: “Only the location was a bit far from EKA... we had to carry everything there,” NM wrote. Although assistance was available, it was unevenly taken up revealing how infrastructural clarity, autonomy preferences, and ad-hoc decision-making shape who can participate, when, and at what cost [22] [30]. Similarly, kiln scheduling miscommunication delayed PS’s ceramics, forcing a restart two days before the show. Rather than rendering these as logistical footnotes, we read them as material-infrastructural pedagogy: breakdowns became prompts for re-planning, delegation, and care.

3.3 Tallinn as a sensory terrain

Tallinn’s layered atmospheres—Old Town walls, Soviet-era housing, creative districts, coastal paths, forests—acted as a distributed studio. Participants walked, collected, recorded, and dwelled; their bodies became sensing instruments. ER combined tactile ceramics with a mobile AR layer to explore how memory could be re-encountered through analogue/digital overlays. For others, lighting, acoustics, and seasonal openness (the academy being quiet in summer) invited slower, durational engagement. Following Pink, we consider these movements emplaced sensing—learning that emerges through bodily passage and perceptual memory [4] [19].

3.4 Informal and invisible spaces

The culmination at Põhjala Tehas, a former rubber factory turned cultural venue, re-situated the residency’s relations. Participants co-curated lighting, layout, and narrative flow; several groups intentionally left elements unfinished to invite public interaction.



Figure 5: Participants observing, engaged in dialogue, and mapping the site of the exhibition. [Photographed by the authors]

We evaluated this re-place-making along two criteria: (1) Participant agency, evidence of autonomous curatorial decision-making, negotiation across teams, and adaptive responses to industrial affordances; and (2) Cross-stakeholder encounter, visitor engagement (touch, dialogue, lingering) and participants’ in-situ facilitation.

Post-event feedback three weeks later indicated that the exhibition crystallized learning by forcing articulation to non-insiders, while also surfacing constraints (time compression, transport coordination) to address in future iterations.

3.5 The exhibition as re-place-making

The culmination of the residency at Põhjala-Tehas, a former rubber factory turned cultural space, was not simply an end-point but a re-placing of the design process. The industrial textures of the site, combined with its history of transformation and community reuse, provided an evocative backdrop for the final works. Participants were involved in curating the space themselves: arranging lighting, positioning work, and collectively deciding how to narrate their processes. In doing so, they enacted a form of co-curation as pedagogy, one that mirrored the residency’s emphasis on relationality and openness [21].

Some participants chose to “leave things unfinished” as a deliberate gesture inviting the audience to sense the residues of experimentation. Others included field recordings, unedited video loops, and process sketches alongside more “final” artefacts. The exhibition became not a showcase, but the participants’ conversation with place and publics, a prefigurative affect creating conditions for future relationalities to be imagined and rehearsed in the present [2] [23].

4 Designing-with materials, space, and more-than-human relations

Participation in the residency unfolded not only among people but also through continual negotiation with materials, tools, atmospheres, and temporal rhythms. Clay that cracked, sensors that failed, light that shifted each event shaped decisions and collaborations. Following Barad’s notion of *intra-action* [24], agency was



Figure 6: Participants explore technologies, tools, and materials through different studios and workshops available during the residency. [Photographed by the authors]

distributed across these relations rather than located in individual makers. Design became a choreography of attentiveness, resistance, and improvisation [22] [25] [26].

4.1 Material encounters as relational practice

Working with materials often repositioned participants from controllers to companions. AT observed, “Working with both digital and analogue forms helped me focus on tactile nuances... the physical manipulation of leather taught me an intimate understanding of material behaviour.”

Group 1 (AT, MC, CG) experienced this shift when woven components in their ceramic–textile installation began to unravel. Instead of repairing them, they foregrounded fragility, letting loose threads become a metaphor for disintegration. This speculative failure [27] mirrored the decayed textures of the exhibition hall and re-signified error as emergence.

Group 2 similarly allowed imperfection to guide transformation. Their shrine-like assemblage of leather, clay, and dried plants evolved from static display to interactive altar as visitors instinctively touched and rearranged elements. NI described the process as “a conversation with space and audience,” underscoring that form emerged through response rather than prescription [28].

For others, technological resistance prompted creative redirection. DB’s plan to weave conductive thread for sound-responsive textiles faltered repeatedly. “The technology wouldn’t cooperate,” she noted, “but imperfection became part of the story.” Staying with this difficulty echoed Haraway’s call to “stay with the trouble” [29]; rather than abandoning the work, participants learned through repair, adaptation, and shared problem-solving.

4.2 Sensing and facilitating environments

Material engagement was inseparable from spatial and atmospheric cues. Light filtering through studio windows or the humidity of the summer air subtly altered how artefacts were perceived and handled. At the exhibition, shifting daylight re-composed installations throughout the day, teaching participants to design with temporality as much as with form. ER reflected that engaging visitors became integral: “Without personal interaction, many might not have explored the digital layer of our piece. I realized placemaking isn’t just creating space but facilitating an experience.” Facilitation

here extended beyond interpersonal guidance to include curating how materials, light, and movement shaped understanding.

4.3 Improvisation, friction, and care

Across projects, participants practiced participation as continual improvisation, deciding when to intervene and when to yield. Early ambiguity within teams demanded sensitivity to rhythm and emotion: “It wasn’t about dividing tasks,” one participant explained, “but sensing when to speak, when to rest, when to try something.”

Such embodied negotiation foregrounded care as both affective and infrastructural [30]. Groups learned to check on each other’s energy, redistribute tasks, or slow their pace when materials resisted or resources failed. These micro-acts of responsiveness were as pedagogically significant as finished artefacts.

Through these entanglements, designing-with became a pedagogy of attention. Participants cultivated affinities [12], potent sensory connections that arose between hands, materials, and surroundings. Instead of producing discrete outcomes, they co-produced evolving relations with clay, fabric, software, and place. Materials were not inert; they were timekeepers, irritants, companions. Space, likewise, was not backdrop but co-author, continually re-framing perception and pace.

4.4 Synthesis

What emerged was less a model of participatory design than a field of relations where human and non-human actors co-constituted learning. Failures, repairs, and tactile discoveries all generated insight into how participation can be sustained through responsiveness rather than control. The residency thus reframed making as *sensing-and-caring-with* a situated, improvisational ecology that aligns with PD’s movement toward more-than-human and relational infrastructures [21] [24] [30].

5 Play, speculation, and emergent pedagogies

If participation structured *how* relations unfolded during the residency, play described *how learning moved* through uncertainty. Play was not mere amusement but a relational method for exploring possibilities when outcomes were undefined. In design-pedagogy terms, it created a temporary infrastructure for improvisation, an experimental “as-if” space where participants could test ways of being together [32] [33]. This echoes Skovbjerg et al.’s claim that play’s transformative power lies in its ability to sustain curiosity and wonder amid ambiguity [32].

5.1 Play as epistemic openness

The residency’s theme *Analogue+Digital=Sensorial* served less as instruction than as an invitation to interpret, misinterpret, and reframe. Group 5’s *Sensorial Rubik’s Cube* exemplified this. When their digital sensors failed, the team abandoned technical precision and re-imagined the puzzle through touch rather than colour, creating an artefact accessible to colour-blind users. ZB reflected, “Removing colour made the puzzle drastically unfamiliar... slowing perception became part of the point.” By transforming malfunction into method, the group shifted from problem-solving to sense-making, foregrounding slowness and attentiveness as design values. This improvisation enacted what Savransky calls “techniques of

imagination” [33], pedagogical gestures that privilege openness over resolution.

Group 6’s daily walking ritual likewise emerged through play. Initially devised to defuse tension, it evolved into a core design practice: collecting sounds, leaves, and sand, then translating those textures into an audio installation. The group’s bodies became sensing instruments, “drifting through textures” and letting rhythm guide decisions. Such activities demonstrate what Hjorth & Lammes describe as playful method assemblages [17], practices where co-presence and responsiveness outweigh linear planning.

5.2 The pedagogy of uncertainty

Play operated as a pedagogy of not-knowing. Its value lay in exposing the limits of mastery and inviting relational risk. For some, this openness was exhilarating, for others, disorienting. NM recalled, “We decided not to limit ourselves by tasks or roles... This freedom really helped us build our final vision.” Yet ER noted that open-endedness sometimes produced anxiety about contribution and direction. These tensions align with Tlostanova’s call for decolonial pedagogy that accepts dissonance as part of learning [35] [36]. Rather than smoothing differences, facilitators framed uncertainty as shared terrain, a chance to practice negotiation and care.

Structurally, the residency alternated between anchored sessions (workshops, check-ins) and open time. This rhythm balanced instruction and experimentation: participants could retreat to familiar routines or push into speculation. As Redström suggests, design programs should remain “suggestive and open for the unexpected” [11]. Here, the residency itself functioned as a speculative curriculum, rehearsing future ways of collaborating in the present.

5.3 From play to infrastructuring

Moments of play also revealed how participants co-produced the residency’s learning infrastructure. Activities such as shared meals, ad-hoc studio rearrangements, and spontaneous material exchanges created social and spatial scaffolds that supported others’ experiments. Through these acts, participants effectively engaged in infrastructuring [30], building the relational conditions for ongoing collaboration. Care and improvisation thus became infrastructural labour, maintaining the social fabric that made experimentation possible.

At the exhibition, playful openness extended to audiences. Some installations invited visitors to touch, rearrange, or add sounds, turning the show into a site of continued participation. NI observed, “Everything just flowed so naturally, as if we were conduits for the space and the work to exhibit themselves.” This performative extension exemplifies prefigurative pedagogy [23], designing situations that embody alternative futures rather than merely representing them.

5.4 Synthesis

Across these examples, play functioned as a mode of co-production. Participants, facilitators, and materials collectively shaped both process and outcome, dissolving conventional boundaries between teacher, learner, and artefact. Play transformed failure into a shared resource, turning friction into connection and speculation into

method. It illustrated that participatory design education can cultivate agency not through instruction but through conditions that support uncertainty, conditions of mutual responsiveness where meaning emerges relationally.

In this sense, play was not supplementary to design; it was design. It redefined making as a practice of sensing, adjusting, and caring with others, human and more-than-human. This orientation reframes participatory pedagogy as an open infrastructure of learning, one that privileges process over product and relation over resolution.

6 Conclusion: Towards a relational pedagogy of participation

The *Sensorial Design Residency* functioned not as a model to replicate but as a living inquiry into how participatory design can be practiced, felt, and learned. Through embodied, cross-cultural collaboration, participants engaged in processes of co-experiencing, shared making, and situated reflection—not through consensus or instruction, but through friction, vulnerability, and improvisation.

Participation emerged as a distributed and affective condition, unfolding through gestures, materials, atmospheres, and pauses. It was neither a stage in a method nor a fixed outcome but a rhythmic state of being-with others, human and more-than-human. Such distributed agency echoes Savransky and Lundy’s ecology of perhaps [18] and Light & Akama’s politics of care [30], situating design learning within networks of reciprocity and response.

Pedagogically, the residency demonstrated that participation can be co-produced rather than delivered. Facilitators and participants collaboratively shaped the program’s tempo, routines, and meaning. Co-production here refers to a flattening of hierarchy between educators and learners, where the act of learning itself becomes a collective design project. At the same time, the residency enacted infrastructuring [30], the ongoing cultivation of social, spatial, and material supports that enable participation beyond a single event. Workshops, meals, and informal rituals served as micro-infrastructures of care, sustaining the residency’s collaborative fabric and seeding future networks between institutions and participants.

Play further operated as a speculative infrastructure, modelling how uncertainty can generate shared learning rather than anxiety. By embracing failure and improvisation as productive forces, participants rehearsed alternative ways of working and living together. These gestures extend participatory design theory toward relational pedagogy: learning as co-production, space as collaborator, and care as method.

From these situated reflections, we propose several commitments for participatory design education:

1. Root participation in relation, not productivity-value emergence over efficiency.
2. Recognize play and speculation as epistemic tools that invite collective imagination.
3. Treat space and material as co-actors shaping inclusion and rhythm.
4. Understand facilitation as infrastructuring—holding space for ambiguity and care.

5. Acknowledge sensorial engagement as a plural way of knowing that exceeds language.

In summary, the residency suggests that participatory design education must learn to listen differently—to bodies, to materials, to place. By cultivating openness to what is unresolved, design can evolve from producing solutions to sustaining relations.

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What's on the (Tension) Radar? An Invitation for Co-Reflecting on the Values at Stake towards Greater Footprints of Impact

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Abstract

Building on traditions of reflective practice and co-reflection, this paper explores a turn from individual sense-making into collective learning. The Tension radar is presented as a visual and dialogical tool that supports reflection on how PD values are negotiated within and across situated work. It aims to make the tensions that emerge in practice visible, trace how positions shift over time, and provide a space where the reasoning behind choices can be surfaced and collectively learned from. We propose the Tension radar as an early-stage proposal, open for evaluation and continued development within the PD community and relevant stakeholders beyond. With the aim of supporting shared reflection on practical wisdom (*phronesis*), this paper explores forms of reflection on PD's democratic values at stake and the field's contemporary ambitions towards greater footprints of impact.

CCS Concepts

• Human-centered computing → Participatory design.

Keywords

Reflective practice, Co-reflection, Tensions, Virtue ethics, Collective designer

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1 Introduction

Contemporary Participatory Design (PD) calls to operate at larger scales, over broader horizons and in more complex political settings, while sustaining its democratic commitments [31]. These ambitions seem to amplify dilemmas that arise when PD's ideals are enacted in worlds not always PD-compatible. Ehn and Badham's notion from 2002 of the collective designer [10] captures this challenge. They describe the collective designer as someone who must constantly negotiate between PD's democratic ideals and the messy

politics-in-practice. This balancing act, which they describe as “anxious acts of political love”, is a commitment to democratic values that nevertheless requires grappling with limited resources, institutional constraints, and conflicts of interest: raising the question of whether “defensible compromise” can be justified. As early-career researchers in Human-Computer Interaction, exploring PD's histories and its ongoing attempts to enact its foundational values, we resonate with the struggle of translating theory into practice.

Calls have been made for PD to proliferate, extending its reach beyond its community to form broader alliances for societal change [12]. We consider Ehn and Badham's notion of the collective designer as a role formulation of relevance to reach a broad notion of practitioners inspired by PD. In this paper, we use this role to encompass anyone who is inspired by PD's ethos while facing constraints in their situated contexts. When referring to PD's ethos, we draw on Bødker's synthesis of PD's values centering on supporting democracy, such as the empowerment of people through design processes, emancipatory practices grounded in mutual learning between designers and participants, and an understanding of humans as skillful and resourceful in developing future practices and technologies [6].

While PD offers a rich vocabulary for addressing power, collaboration, and infrastructural change, it provides fewer tools for practitioners to collectively reflect on how these ideals are enacted and tensions faced. This paper thereby introduces the Tension radar, a visual and dialogical tool for making tensions in the practice of the collective designer visible. It builds on traditions of reflective practice [27], co-reflection [37], and ethical story sharing [19] to transform individual sense-making into collective learning. In doing so, it aims to offer a concrete means to cultivate *phronesis*, the situated practical wisdom that Ehn and Badham identify as essential to PD's politics-in-practice [10].

We present the Tension radar as a ‘Stage-0’ initiative [32]: a speculative proposal of a tool that has not yet undergone empirical validation, designed to be shaped, tested, and critiqued through collective use by interested practitioners across diverse contexts. Its purpose is to invite collective inquiry into how PD's ethos is enacted and challenged, and to facilitate discussion under what conditions certain compromises might be considered justifiable in the strive towards greater impact. Acknowledging agonistic design traditions [9, 24], the Tension radar is designed to surface tensions as negotiable across different viewpoints to act as a resource for mutual learning, strategy, and alliance-building.

The paper is structured as follows: Section 2 revisits PD's contemporary ambitions and theoretical grounding in reflection and



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collective sense-making. Section 3 introduces the design and rationale of the Tension radar, demonstrated in a fictional scenario. We conclude by proposing the Tension radar as a scaffold for reflective practice in a messy world.

2 AMBITIONS TOWARDS GREATER IMPACT

2.1 ‘Facing The Big Issues’ in contemporary PD

PD, with its democratic ambitions, has always been a practice inherent with political tension. Emerging from Scandinavian workplace politics, it was explicitly positioned as a counterweight to managerial control over computing and the organization of work. [7] argue that while PD was once grounded as action research exploring alternatives with strong alliances (e.g., unions), much of the work has drifted toward what they call “small issues”: better workshops, and short-lived co-creation that leaves power and infrastructures largely untouched. They call for a renewed action-research and activist stance for PD: one that embraces conflict, crafts long-term alliances (with unions, municipalities, civic groups), and does the institutional work (policies, roles, competencies, budgets) that sustains participation after projects end. Their invitation to “face the big issues” reframes PD as long-horizon, activist scholarship that operates across arenas and timescales, “tying knots” [5] to bring together communities, institutions, and infrastructures, so that those most affected can co-shape futures “that matter” [7].

[7] activist stance to focus on ‘the big issues’ resonates with recent calls that situate PD within broader and more complex arenas. Agendas have been set for PD to operate across larger scales, targeting both time and broader spatial horizons [31]. This marks a move towards building relationships, and better conditions for societal transformation guided by PDs ethos [32]. The contemporary agenda is consolidated around practices of *politicising*, *diversifying*, *relationality*, and *transformation*, maintaining a focus on power inequalities and on how collaboration with affected actors can be sustained and scaled across contexts [30]. As [30] note: “*as key contributions to PD over the past decade highlight [14, 31, 42] in contemporary PD’s evolution is characterized by ambitions, tensions, and critical concerns regarding how to practice within – and respond effectively to – changing global conditions*”. Navigating such complexity poses the question of whether practitioners might also need to update their toolboxes to support their practices.

2.2 PD beyond academia and the risk of losing its ethos

There has long been a concern that, in scaling, PD has lost, and continues to lose, its political rooting and is becoming diluted [22, 28, 32]. As contemporary PD calls for interventions across domains and into arenas beyond academia, the question about what may be lost in the process is a continued concern [21, 29]. Scaling PD to arenas not immediately PD-compatible, raises questions about how its ethos can be sustained when incentives and priorities differ [21]. PD practitioners have begun experimenting with condensed forms of PD, including Participatory Design Sprints [8]. However, there is “reason to remain cautious about watered-down PD or the risk of pushing towards ‘engagement theatre’” [8, p 96]. At the same time, such sprint formats can provide PD “a way to get its foot in the door of the large-scale projects that ‘really matter [Bødker & Kyng]” [8,

p 96]. It has also been argued that “Fulfilling the principles that have traditionally defined PD is unrealistic in many ways when PD is applied in large IT projects” [38, p 151]. Other scholars further warn that PD is spread too thin as “it has spread itself across geographies, ideologies, methods, and time itself – losing definition or political teeth.” [2, p 5], further raising the dilemma of whether PD can scale without compromising its foundational principles.

2.3 Working with tensions and the ‘Politics-in-practice’

PD has developed intermediate “strong concepts” [17], capturing diverse strategies towards longer-term changemaking centering PD (e.g., *infrastructuring* [18, 33], *Institutioning* [15]). One particularly relevant concept in the context of this paper is that of *collectives*, referring to the evolving constellations of people, institutions, technologies, and environments that come together around shared concerns [16]. *Commoning* is another concept capturing the ongoing care for what these collectives hold in common, resources, spaces, knowledge, and relationships, and the practices through which these commons are maintained [16]. Together, PD’s strong concepts direct practitioners to look beyond isolated projects. They foreground longer-term practices of building infrastructures, caring for shared matters collectively, and reshaping institutions to sustain democratic engagements. Such practices span across diverse actors, values, and situated realities producing tensions that have opened for agonistic strands in PD work [3, 9].

Rather than aiming for consensus, an agonistic approach values difference as a constructive force, viewing democracy as an arena of ongoing contestation among legitimate but conflicting perspectives [24]. Embracing an agonistic approach means that designers must balance conflicting demands and ideals. The challenge is not only theoretical but practical, figuring out how to act democratically when power, interests, and values are in tension; a task made more difficult when the context of design is shaped by boundary constraints [34]. Ehn and Badham [10] describe this balancing act as the role of the collective designer who must navigate limited resources, institutional constraints, and conflicting interests while staying committed to democratic values. They highlight the dilemma of being “in-between” two extremes when translating theory into practice, and call for a shift “from espoused politics, utopias and ideologies towards politics-in-practice” [10, p 5]. The authors reason:

“On the one hand we have collective design as a democratic profession with a strategy of democratic visions, communication and reconciliation, standing the risk of in practice to act as naive and idealistic ‘do gooders’. On the other hand we have collective design as political war with a strategy of power analysis, strategic actions and reconstruction, standing the risk of total cynicism and the breakdown of design as profession” [10, p 6]

Rather than falling into either naïveté or cynicism, they propose navigation between these poles to develop “speculative propositions as acts of political love” [10, p 6]. This refers to staying committed to democratic values while recognising the messy realities of

practice by being “a pragmatic change driver combined with a visionary moralist” [10, p 6]. They reflect this through the Aristotelian virtue of *phronesis* [1], referring to “experience-based ethics oriented towards action.” [10, p 6], when designers use their situated judgement to decide what ought to be done here and now, given real constraints and consequences.

The collective designer engages with the dilemma of turning PD's ideals into action, not only acknowledging ideals but also the pragmatic negotiations “to get things done” [10]. This raises a broader question for PD as a community: can there be space for a “defensible type of compromise, deceit and hypocrisy” [10]? In other words, can there be transparent compromises made in pursuit of long-term participatory transformation? Considering contemporary calls for PD to expand its impact [7, 31], we believe Ehn's and Badham's reflections remain greatly relevant.

2.4 From individual to collective reflection

Navigating politics-in-practice requires situated judgement, which can be supported by Schön's notions of *reflection-in-action* (thinking whilst doing) and *reflection-on-action* (retrospective sense-making) [27]. PD has long cultivated reflective practice, and these concepts remain central for understanding how practitioners navigate the messiness of indeterminate situations [27, 30]. In learning science, [37] extends individual reflection toward a social account of co-reflection: collaborative critical thinking oriented toward shared understanding. [37] argues that reflection happens both implicitly (tacit) and explicitly (active) in collective learning. At times, it unfolds implicitly as participants engage with notes, sketches, prototypes, or decision logs that gradually align perspectives. At other times, becoming explicit as people articulates reasons and negotiates interpretations in conversation.

Ethical challenges in PD rarely appear as abstract principles but instead arise in concrete dilemmas of participation, harm, benefit, and power [19]. Practitioners navigate these dilemmas through ethical virtues such as reflexivity, courage, and attentiveness, which function as tools for situated judgement [19]. Ethical stories shared collectively are also described to help newcomers learn from the dilemmas of more experienced practitioners [19, 23]. The above notions inform how reflection can move between tacit and active forms [23, 37], but also between individuals and groups, and between situated contexts and broader project value foundations.

2.5 Towards a toolbox of collective reflection strategies

The move from individual to collective reflection is increasingly emphasised across domains [23]. Reflection, while often beginning as a personal process, becomes most meaningful when it happens through interaction and dialogue with others, supported by facilitation and environments that encourage openness and empathy [23]. What follows is not a systematic review but an exploration of strategies that guide co-reflection on practice.

Within PD, several approaches explicitly scaffold reflective practice. Tool-to-think-with [13] helps practitioners trace coherence across epistemology, values, stakeholders, and outcomes. Positionality toolkits [20] use cards and comics to articulate standpoints and power relations, while ethical stories [19] circulate dilemma

cases that turn ethical reasoning into a shared pedagogical resource. In open-innovation contexts, [36] show how co-reflection sessions can initiate stakeholders to negotiate value propositions from their different standpoints and merge perspectives into shared visions and collaboration across disciplines and institutions. In community-based traditions in research and design, collective reflection is formalized as an iterative cycle of learning between partners [25]. The Engage for Equity toolkit [25] is one example of a tool where such recurring cycles of planning, action, and reflection are used to strengthen partnerships and align efforts toward goals of social justice.

Reflective practice is embedded in several professional accreditation frameworks, underscoring its role in ethical and professional judgment [23]. In healthcare, tools such as the One-to-Five Method [11], Moral Case Deliberation [35], and Schwartz Rounds [14] support teams to deliberate on ethical and emotional dimensions of their practice. In political science, the Accountability Cube [4] and PAKT framework [26] make abstract notions like accountability and deliberation traceable and discussable by modelling how information, arguments, and values circulate in practice. These are examples that show how collective reflection can be cultivated through artefacts and narrative practices that make values and trade-offs discussable.

3 OUR PROPOSAL AS AN ADDITION TO THE TOOLBOX: THE TENSION RADAR(S)

3.1 The concept of the Tension radar

Building on Ehn & Badham's notion of the collective designer, the Tension radar aims to provide a scaffold for reflecting on when, and under what conditions, certain compromises can be considered justifiable while allowing multiple narratives to coexist. Drawing on the metaphor of a radar, the tool maps which values, concerns, and tensions are “on the radar” within a collaborative design setting. Values and commitments associated with PD practice are positioned along co-defined axes relevant to the participants' specific context, with their perceived enactment visually mapped. Rather than policing what “counts” as PD, it makes visible how practitioners enact PD's ideals under real constraints, thus making visible what is “lost” and “won” in processes of “defensible compromise” [10]. It may also help identify where counterbalancing actions are needed and specify which elements of PD should be safeguarded. The Tension radar could simultaneously become a prompt for agonistic exchange [9], allowing differing perspectives to be surfaced, debated, and learned from as part of collective sense-making.

The Tension radar aims to act as both a mirror for individual reflection-on-action, and a mediator for collective dialogue. As mentioned in Section 2.4, the use of visual record of plots and narratives could support implicit reflection by documenting collective notions over time, while conversations around the mapping enables active co-reflection through the explicit negotiation of values and strategies [37]. The tool could turn private reasoning into shared learning, helping practitioners articulate and evolve their judgements about practice. By facilitating the articulation of virtue-based stances, it could assist discussion on reflective judgement (*phronesis*) and aid practitioners navigate tensions responsibly [10]. In line with the exploratory nature of this paper, we explore two variants of the

Tension radar: ‘Values at Stake’ and ‘Footprint of Impact’. They share the same visual form but have two different emphases.

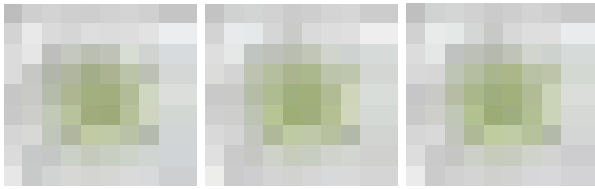


Figure 1: The ‘Values at Stake’ Tension radar

3.1.1 Values at stake. In this version (Fig. 1), the core of the Tension radar represents values that participants perceive as currently being well supported, while positions further from the center indicate increasing compromise. Practitioners identify key values or tensions in their situated practice and define the axes accordingly. Each plotted ‘dot’ indicates practitioner’s subjective stance: the closer to the center, the more strongly they feel that this value is upheld; the further out, the greater risk of dilution. The example in Fig. 1 illustrates a tension between empowerment and pragmatic actions that reduce empowerment for certain participants, a tension found in [19]. When the dot for the empowerment axis is placed closer to the center, this suggests stronger alignment with PD’s ethos. The other axes are deliberately left open to accommodate situated concerns. In team settings, conflicting values may be plotted simultaneously.



Figure 2: The ‘Footprint of Impact’ Tension radar

3.1.2 Footprint of Impact. In the second version (Fig. 2), the underlying logic is reversed: values positioned further outward indicate greater impact or representation. This creates a ‘footprint of impact’ where larger space taking in the map indicates priority across dimensions. Practitioners map PD’s broader ambitions along the axes of the Tension radar, with the outer edge of the circle representing a desired horizon. The further outward a case is plotted on a given axis, the greater its anticipated impact in that dimension.

The two versions pose complementary questions: how can PD’s core values be safeguarded, and how can practice centering PDs ethos expand to face the “big issues” [7]? Revisiting the Tension radar over time can reveal shifting values and strategies, prompting reflection questions such as: Which dimensions are consistently left behind? Where might new alliances, practices, or infrastructures be needed to extend reach across the [x] axis?

3.2 Operating at two levels: from individual to collective mapping and reflection

The Tension radar is intended to operate across different scales: by individual as well as collectives, but also within projects and across projects. At the individual level, it builds on Schön’s reflective practice [27] by providing a scaffold to articulate and trace tensions in situated work. At the collective level, it can provide a shared reference point allowing for negotiation amongst different stakeholders (Fig. 3, left). Overlaying mappings (Fig. 3, right) in a shared area of concern could reveal complementarities, differences in value foundations, and cross-case patterns, to highlight where PD values are safeguarded or where blind spots emerge.

To reduce the risk of treating high ‘scores’ as signs of ethical success, we propose a simple norm of ‘no plotting without narrative’. Each mapped position should be accompanied by a short ethical story [19], for example, through post-it notes, explaining the reasoning.



Figure 3: Collective reflection (left), and overlaying different projects or time stages (right)

3.3 Exemplifying the Tension radar through a scenario

To illustrate how the tool can be used, we present a hypothetical scenario in which the Tension radar supports co-reflection in a co-design project. The scenario is illustrative rather than empirical, as in-depth empirical analysis lies beyond the scope of this exploratory paper.

Context and participants. Two PD researchers joined a project aiming to co-design a glucose-tracking technology for children, involving children, physicians, hospital representatives, and a commercial technology company. The researchers are initially invited to understand children’s needs and contribute early design ideas.

Emerging tensions. As the project progresses, participation becomes increasingly constrained: time with children is reduced, clinicians disengage, and decision-making centers on managerial, technical, and budgetary concerns. The researchers observe a growing misalignment between the project’s participatory ambitions and its current direction. They raise concerns that children will have no meaningful influence over the design, that participation risks becoming symbolic, and that the design may reduce children’s

autonomy in everyday activities. They propose a Tension session to reflect on these tensions.

Determining the axes. The participants are first asked to individually identify the values they consider critical to the project. The PD researchers chose children's empowerment and quality of participation; physicians chose clinical safety and medical accuracy; hospital representatives chose project efficiency and effectiveness of use; and app developers chose technical feasibility and time-to-market. These values form the axes of their Tension radar.

Mapping 'values at stake'. The group then plots how well each value is currently upheld, using the values at stake logic. The dot on the axis of children's empowerment is placed near the outer edge of the Tension radar, signaling dilution of participatory ambitions, while the dots on the axes of technical feasibility and clinical safety are positioned near the center. Each placement is accompanied by a post-it to document the group's reasoning. The project manager highlights the project's timeline and the current risk of delay. This prompts a discussion about the tension between meaningful involvement of children and time constraints. While this mapping did not resolve their disagreement, it made visible how participatory values are compromised in practice.

Mapping 'footprints of impact'. The group then maps the anticipated footprints of impact to visualize how much space each value currently occupies. For each axis, they plot the expected reach and durability of the project's influence. The Tension radar shows a strong and lasting impact on the technical and organisational axes, but a weak footprint for children's empowerment. This visualisation prompts discussion about complementary actions needed to move further towards the desired horizons as set by the project in the beginning.

Next steps. Recognising when compromises threaten children's wellbeing and agency, the group initiates collaborations with a children's rights organization, a patient advocacy group, and designers from related healthcare projects. They form a proposal to secure funding for in-depth qualitative work with children and sustained engagement with the technology company.

The example illustrates how the Tension radar could support collective judgment about when compromises in the project may be defensible, and when additional actions are needed.

4 INVITATION AND NEXT STEPS

The Tension radar is a proposition to be explored with anyone identifying as a collective designer within and beyond academia. We see potential for further experimentation in workshops where practitioners can tailor and evaluate the tool's usefulness for (co)reflective practice. Making ethical struggles visible is not an easy proposition, and the Tension radar foregrounds friction: asking practitioners to engage with discomfort, expose imperfection, and reflect on trade-offs that may be contested from other's stances. Further work is needed to explore how the Tension radar might scaffold the commoning of addressing tensions constructively, supporting mutual learning while allowing for different standpoints. However, we hope that the tool might serve as a starting point to facilitate guidance, which resonates with a recent call by [19]:

"Having more guidance and support will not only help to improve the quality of practitioners' decision-making, but will also make them feel more confident and comfortable in handling the ethical issues they encounter." [19, p 342]

For PD to meet contemporary challenges, it's called to proliferate, not through ever finer methods, but by extending outward through "alliances, fora, and networks" [12]. There is a call for PD to promote knowledge circulation through both intermediary forms (such as tools or strong concepts) and embodied literacies (skills and sensibilities carried by practitioners) [12].

'How can distant sources of knowledge be meaningfully related to each other to make the sum greater than its parts? We cannot claim here to have any definite answers to this challenge, but argue that seeing PD practice as a learning network of social actors may provide one possible way forward.' [12, p 10]

Tools and spaces for co-reflection could contribute to this agenda by providing a scaffold for reflection that helps insights travel between practitioners and contexts. By using the Tension radar collectively, it might make visible patterns of compromise as well as opportunities, transforming local dilemmas into a shared knowledge bank. Further considerations are needed to scaffold the actions to be taken after co-reflection. PD's challenge is not to hold on to democratic ideals in theory but to enact them within a messy world and "getting things done" [10]. We look forward to engaging with the community's perspectives on if, and how, the Tension radar might support the negotiation of this balancing act.

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Hopscotch: Playful Participatory Action Research

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Abstract

This exploratory paper introduces *Hopscotch* as both a metaphor and a methodological provocation for participatory, art-based action research that fosters dialogue and coexistence. Emerging from a collaborative workshop in art and design education, *Hopscotch* reimagines research as a rhythmic, embodied, and playful practice where researchers become active participants in shared inquiry.

Rooted in Art-Based Action Research (ABAR), Participatory Research through Design (PRtD), and contemporary play theory, *Hopscotch* reframes participation as movement, improvisation, and relation rather than linear process or output. Through the metaphor of the chalked court—ephemeral, local, and co-created—this paper examines how playfulness can open space for trust, curiosity, and ethical attention in cross-disciplinary collaboration.

Drawing on reflections from a workshop at the Estonian Academy of Arts, we articulate *Hopscotch* as an early-stage methodological framework for rethinking participation as a process of living and learning together. In doing so, it aligns participatory design pedagogies that value ambiguity, care, and embodied dialogue.

CCS Concepts

• Human-centered computing; • Interaction design; Interaction design process and methods; Participatory design.;

Keywords

Play, participatory design, action research, coexistence, dialogue, design education

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1 Introduction: Leaping into uncertainty

We begin not with a blueprint, but with a playground. Imagine a patch of pavement marked in chalk—a field of possibility, open to anyone who steps in. *Hopscotch* is both a game and a gesture: a way of leaping into uncertainty, negotiating balance, and learning through movement. In this paper, we propose *Hopscotch* as a

metaphor and a methodological provocation for participatory, art-based action research concerned with living and learning together.

Amid global disconnections and disciplinary divides, *Hopscotch* invites a return to embodied, relational inquiry. It treats play as a catalyst for dialogue, an act that can nurture coexistence through shared risk, rhythm, and reflection. Drawing from our experiences in collaborative workshops at the Estonian Academy of Arts, we explore *Hopscotch* as an exploratory method, one that tests how participation might be enacted through movement, missteps, and co-creation. Rather than prescribing procedures, *Hopscotch* opens a court for experimentation, where participants and researchers negotiate meaning through gestures of care and curiosity.

2 Foundations: Play, participation, and creative Research

Hopscotch did not emerge in isolation. It is situated at the intersection of traditions that question how knowledge is produced and who gets to participate in its making. Drawing from Art-Based Action Research (ABAR), Participatory Action Research (PAR) and Participatory Research through Design (PRtD), as well as contemporary play theory, we frame *Hopscotch* as a playful, situated, and relational approach to inquiry, one that privileges movement, affect, and imagination over fixed procedure. Together, these fields enable us to articulate play as a participatory mode of coexistence, where research becomes a shared choreography rather than a solitary pursuit.

2.1 Thinking through making

ABAR positions making as a way of knowing. Creative practice can generate embodied and affective knowledge. This perspective aligns with participatory design's commitment to material dialogue—understanding through doing [1] [2] [3]. In *Hopscotch*, the chalked court becomes both canvas and conversation: a space that records gestures, hesitations, and returns. Here, making is not a means to illustrate ideas but a process that produces them. The ephemeral, revisable qualities of chalk mirror the provisional nature of participatory knowledge—situated, negotiated, and open to revision.

2.2 Participatory research through design: Designing the court

From PAR, *Hopscotch* inherits the ethos of *doing research with rather than on* participants. From PRtD, it borrows the experimental stance that treats artefacts and actions as boundary objects [8] provisional mediators that hold difference and spark reflection. As in PRtD, where the value lies in tensions rather than resolutions [9], *Hopscotch* treats misalignment as productive. Yet it extends



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these ideas by shifting attention from artefact to affordance, from what we make to how we move. The “court” of inquiry is co-drawn and constantly renegotiated, emphasizing participation as rhythm and responsiveness. This mobility invites participants to inhabit uncertainty together, fostering empathy and mutual attunement—conditions essential to coexistence.

2.3 Research as mood and movement

Play theory offers a language for the moods and movements that animate *Hopscotch*. Scholars such as Skovbjerg (2021), Legaard (2023), Sicart (2014), and Nicholson (2015) frame play as affective, relational, and resistant to closure [11] [12] [13] [14]. Skovbjerg’s notion of “play moods” therefore sliding, shifting, exceeding helps us see how inquiry itself can oscillate between control and release [11]. Legaard’s distinction between flow and wonder is especially useful; while flow seeks absorption, wonder lingers in uncertainty [12]. *Hopscotch* embraces this wonder, inviting researchers to move attentively without rushing toward conclusion. Play thus becomes a method of coexistence, a way of thinking and feeling together across difference, holding tension without erasing it.

In summary, *Hopscotch* synthesizes ABAR’s poetic inquiry, PRtD’s participatory politics, and play theory’s celebration of emergence. It offers not a fixed protocol but a field of possibility, a rhythmic, ephemeral space where knowledge is co-produced through embodied movement, mutual care, and shared imagination.

3 The Hopscotch metaphor

Hopscotch is more than a childhood game; it is a metaphor for participatory, embodied inquiry. The chalked court, drawn and redrawn, evokes a research terrain that is always in flux, temporary, collaborative, and open to revision. Where traditional methodologies emphasize stability and linear progression, *Hopscotch* proposes movement, rhythm, and re-entry as ways of knowing. It frames research as an act of *coexistence in motion*: to leap, to misstep, to return, and to continue together.

3.1 The court as method

A *Hopscotch* court is typically chalked onto a pavement; improvised, site-specific, and easily erased. Its structure is recognizable but never identical; players co-design its layout, altering it to fit the terrain or to include new rules. Likewise, participatory design research unfolds in contexts that demand responsiveness. The field of inquiry is drawn collectively, reshaped by participants’ contributions, and contingent upon their movements. The chalk court becomes a visual and spatial metaphor for the methodological ethos of participatory design, therefore, iterative, inclusive, and provisional.

In our framing, the court signifies a shared infrastructure of participation. It is a common where boundaries are negotiated, erased, and redrawn. This echoes PD’s historical roots in collective sense-making and democratic experimentation. The impermanence of chalk reminds us that participation is never fixed—it must be continually renewed through gestures of care, dialogue, and reconfiguration.



Figure 1: Delving into the *Hopscotch* method at the Estonian Academy of Arts, Art & Design Doctoral School discussion. [Photographed by the authors]

3.2 Moves into inquiry

Each gesture in the game offers a methodological cue. Throwing the marker represents intention. The throw sets a temporary focus, a question, an ethical dilemma, or a provocation—that directs movement without predetermining its course. The marker’s landing spot introduces risk and possibility, reminding us that inquiry begins with a leap of faith rather than certainty.

1. One foot, two feet suggests alternating modes of engagement: the one-footed hop demands focus and balance, akin to analysis or close observation, while the two-footed stance allows synthesis, rest, or collaboration. Together, these shifts generate rhythm and reciprocity between individual reflection and collective participation.
2. Skipping squares authorizes nonlinearity. In *Hopscotch*, a player might jump ahead or circle back; likewise, participatory research often unfolds in loops and digressions. Skipping steps legitimizes intuition and adaptive sequencing, where insight may emerge from surprise rather than plan.
3. Falling out of bounds redefines failure as feedback. Losing balance is not defeat but information—a moment that reveals the limits of an assumption or the presence of friction. In this sense, *Hopscotch* transforms error into learning, reinforcing the idea that breakdowns can deepen mutual understanding.
4. Redrawing the court acknowledges context. Every setting, academic, civic, or artistic, requires a new configuration. The court is co-created by those who inhabit it, and its impermanence foregrounds participation as both ethical and aesthetic practice: we must continually attend to who draws, who plays, and who is absent.

3.3 Method as relation

Treating method as a game is not to trivialize research but to reclaim its relational vitality. *Hopscotch* values spontaneity, negotiation, and attentiveness. It invites researchers to move with rather than against uncertainty. In collaborative contexts, this translates into practices of listening, pausing, and adjusting, small but significant acts that sustain coexistence.

Play, here, becomes a language of dialogue and care. It offers a way to navigate difference without erasing it, to transform tension into rhythm. In our workshop, participants' courts overlapped, blurred, and merged, demonstrating how shared inquiry can be both personal and collective. The result was not coherence but conversation: an unfolding choreography of marks, steps, and pauses.

3.4 Falling behind and beginning again

Hopscotch reframes research as continual beginning. Each fall, each misstep, invites another round. The method thrives on temporariness, it resists closure. In this sense, it mirrors the work of participatory design as a practice of peacebuilding and coexistence: not the achievement of consensus, but the ongoing effort to live, learn, and make together amid difference. The game's simplest rule, when you fall, start again—captures the ethos we wish to affirm resilience through play, humility through movement, and learning through relation.

4 Method in action: The workshop

The *Hopscotch* metaphor was activated during a co-facilitated workshop held at the Art & Design Doctoral School seminar at the Estonian Academy of Arts. We introduced it not as a finished method but as an exploratory framework, a live experiment in how play might reconfigure participation and dialogue in research. Our goal was to let *Hopscotch* move from theory into action, enabling participants to feel, draw, and inhabit the method together.

4.1 Setting the stage

The workshop began with a shared presentation in which we each offered personal readings of what *Hopscotch* could mean. The first author, a design researcher and practitioner, introduced it as a lens for navigating misalignment in spatial and civic contexts, where public interventions act as open-ended provocations rather than resolved designs. The second author, an artistic researcher and practitioner, presented *Hopscotch* as a poetic and pedagogical stance within education, attuned to bodily navigation, cycles of return, and refusal. These short provocations invited participants to imagine method as movement, to treat research as rhythmic and relational rather than procedural.

4.2 Drawing the courts and moving through

Participants were then invited to "draw their court." The instruction was deliberately ambiguous. Using chalk, string, paper, and tape, they mapped their research projects, questions, or emotions as *Hopscotch* fields. Some drew literal grids on the floor; others composed conceptual diagrams across walls or tables. Each court embodied a different rhythm and tone, some precise, others chaotic or poetic. The act of drawing externalized participants' thinking and introduced material and spatial dialogue: research became visible, tangible, and collectively negotiable.

One participant departed from the familiar grid of hopscotch entirely, drawing instead a series of circular patterns that spiraled across the ground. As she moved through them, she narrated her research journey as cyclical rather than linear, describing moments of returning, looping, and lingering rather than progressing forward.

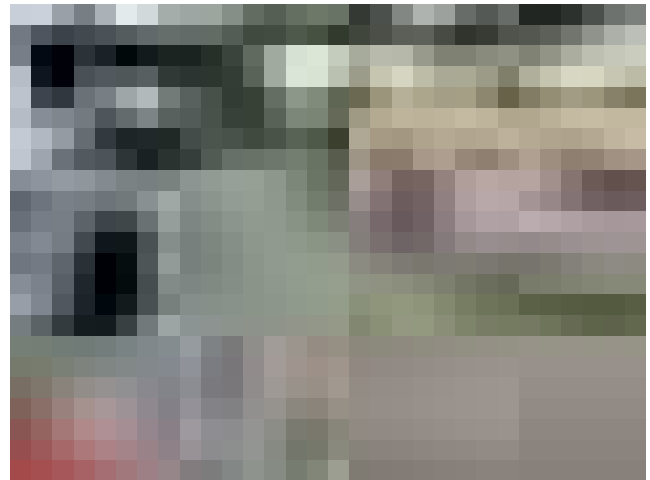


Figure 2: Participants drawing their *Hopscotch* courts during the workshop. [Photographed by the authors].

The circles marked emotional states as much as methodological phases, and her movement between them slowed noticeably as she spoke. Others gathered quietly around her court, listening, stepping carefully at its edges. The absence of blocks made the court feel less directive and more reflective, shifting the tone from instruction to attunement.

In contrast, another participant oriented her court around the plants in the courtyard, allowing the existing vegetation to shape the layout. She created a small maze-like configuration. Each section was given a title such as, *write, create, care, active, exploration, review*, yet none shared the same size or shape. As participants attempted to move through this court, the instability of the court setting resisted clear sequencing. This gesture reframed research not as a stable path, but as a fragile and situated process, shaped by environmental conditions and moments of pause. Another participant, responded by outlining the contours of a spilled water pattern on the ground. Rather than beginning with a drawn court, she worked with what was already there marking the irregular edges, layering gestures onto an existing stain. She described this as an attempt to visualize the instability and unpredictability of her research journey. Her court did not progress neatly. Instead, it rippled outward, capturing emotional peaks and shifts in confidence, and the messiness of partial insights. In doing so, she transformed an unintended spill into a methodological expression, one that revealed how research often takes shape not in control, but in response.

What became particularly noticeable was that no two courts resembled one another. Each *Hopscotch* configuration carried a distinct rhythm, logic, and emotional tone, shaped by how participants understood their own research journeys. This difference did not create distance; rather, it sparked curiosity. Participants expressed a desire to step into each other's courts, to experience how others navigated uncertainty, pause, or progression. Moving through another's *Hopscotch* became a way of momentarily inhabiting a different research sensibility, feeling its tempo, its hesitations, and its openings. In this shared exploration, participation shifted from



Figure 3: A participant’s drawn court encircling a manhole cover, with arrows pointing outward labeled “home”. Circular blocks surrounding the center read “analyze,” “do nothing,” “reflect,” and “investigate.” The layout offers a non-linear map of inquiry, centered around pause and permeability. [Photographed by the authors].

self-expression toward relational learning, where understanding emerged not from comparison or alignment, but from attentive movement across difference.

This stage emphasized situated making as sense-making. The chalk marks, overlapping shapes, and uneven boundaries mirrored the diversity of voices in the room. The process demonstrated how shared uncertainty can foster trust and curiosity, key preconditions for coexistence within participatory inquiry.

In the second phase, participants were asked to step into each other’s courts. They could walk, write, erase, or alter what they encountered. Some moved quietly; others improvised small performances or added notes to the floor. This exchange turned the room into a living map of research relations, courts intersecting, blending, or dissolving. As participants navigated each other’s spaces, they engaged in acts of interpretation and empathy. Method became dialogical movement: knowledge emerging through encounter rather than declaration.

This phase surfaced the emotional and ethical dimensions of participatory design. Some participants hesitated, unsure how far to intervene; others relished the unpredictability. The resulting friction was productive, it revealed assumptions, vulnerabilities, and power dynamics often hidden in academic settings. As one participant remarked, “My questions felt different once I stood inside them.”

Following the session, a group reflection surfaced several recurring insights:

1. Embodiment changes reflection. Physical movement invited alternative forms of knowing, felt, intuitive, and affective.
2. Ambiguity supports creativity. The open metaphor encouraged multiple readings, validating difference as a resource rather than a problem.
3. Misalignment can be generative. Divergent interpretations of the court produced rich discussion, reframing disagreement as dialogue.

4. Play legitimizes nonlinearity. Participants found permission to begin mid-process, skip steps, and circle back recognizing the iterative, rhythmic nature of research.

These findings reinforce *Hopscotch* as a participatory pedagogy that values slowness, reflection, and co-presence over control. The workshop became a temporary common, a space where method, mood, and meaning were co-created in real time. These contrasting courts made visible how *Hopscotch* functioned not merely as a metaphor, but as a situated method through which participants articulated and negotiated their research trajectories in real time.

4.3 From workshop to method

Rather than proving a concept, the workshop expanded the metaphor. The courts, marks, and movements became collective artefacts of inquiry, revealing how playfulness can mediate between difference and dialogue. In the spirit of participatory design, *Hopscotch* functioned as a structure of social relations [18], a relational structure that enabled people to meet, negotiate, and make meaning together.

In this sense, the workshop was not just about designing a game; it was about designing conditions for coexistence. Each throw, mark, and step enacted a politics of presence, learning to share space, to take turns, and to begin again when balance was lost.

5 Play, speculation, and emergent pedagogies

Hopscotch asks us to reconsider not only how we research but also how we coexist while researching. Through its play-based choreography, it reframes method as an encounter, a negotiation of power, vulnerability, and imagination. In this sense, *Hopscotch* speaks directly to participatory design’s historical concern with democracy and dialogue: it invites participants to move together rather than to align, to improvise rather than to control.

5.1 Method as movement rather than control

Conventional research methods often seek order, validation, and closure. They promise replicability, clarity, and mastery—qualities that can inadvertently exclude the very uncertainties that generate new knowledge. *Hopscotch* responds by drawing its method in chalk: temporary, responsive, and open to revision. It embodies what Foth and Axup (2019) describe as participatory design’s strength, working within tension rather than resolving it [10]. Here, instability is not a weakness but a practice of attentiveness, a willingness to dwell in ambiguity and listen for what emerges.

This reorientation aligns with feminist, decolonial, and arts-based critiques that challenge positivist epistemologies for privileging certainty over relation [15] [16] [17]. Through its looping rhythm, *Hopscotch* foregrounds knowledge as partial, embodied, and co-constituted. The court becomes a space where multiple truths coexist, temporarily held in balance through play.

5.2 Play as ethic of dialogue

This impulse to move through one another’s *Hopscotch* courts foregrounded play as an ethic of dialogue, where curiosity, rather than consensus, sustained participation.

Play, in *Hopscotch*, functions as an ethic of dialogue. To play is to risk, to reveal incompleteness, to depend on others for rhythm and



Figure 4: Participants exploring the theoretical and practical implications of the 'Hopscotch method.' [Photographed by the authors].

balance. This openness transforms collaboration into a site of care. During the workshop, drawing and stepping into one another's courts demanded trust; it required participants to let their work be altered, even disrupted. Such gestures mirror the practice of participatory design as peacebuilding: dialogue sustained through difference rather than consensus.

Skovbjerg (2021) and Legaard (2023) remind us that play is structured by moods such as excitement, hesitation, wonder that keep conversation alive [11] [12]. In *Hopscotch*, these moods produce relational energy. The hop, pause, and stumble each generate attention: who moves, who watches, who redraws the line. Play, then, becomes a medium for recognizing interdependence, cultivating a capacity for *living together*.

5.3 Power and the politics of play

Not all participants felt immediately comfortable intervening in one another's courts. Some hesitated to step into the circular court, unsure whether movement would interrupt the narration, while others avoided the bubble maze altogether, concerned about disrupting its fragility. These pauses and refusals surfaced unspoken norms around authorship, care, and permission, revealing how participation is always uneven and negotiated.

Yet play is never neutral. It can reproduce exclusion as easily as it invites inclusion. The question "*Who gets to draw the court?*" is also a question of authorship, access, and institutional privilege. Our workshop made these tensions visible; some participants took confident ownership of the floor, while others hesitated at the margins. Such moments expose the politics of participation often hidden beneath well-intentioned collaboration. Acknowledging this unevenness is essential. *Hopscotch* does not erase difference; it slows it down so it can be noticed and negotiated.

This awareness turns play into a critical practice of care. Light and Akama (2014) describe the politics of care as attending to the invisible labour and emotion that sustain collaboration [18]. In *Hopscotch*, care appeared in small gestures—waiting for another's turn, leaving a square blank, erasing one's mark to make space.

These acts constitute a quiet peacebuilding, designing situations where coexistence is rehearsed through respect and restraint.

5.4 Falling, pausing, beginning again

The game's rhythm—throw, leap, balance, fall—models a cycle of learning that values pause and renewal. Falling is not failure but feedback; it invites re-entry with new awareness. This sensibility parallels Tripp's (2005) notion of "rich moments" in action research, where reflection arises from breakdown [19]. By framing error as generative, *Hopscotch* teaches resilience: peace and dialogue are maintained not through perfection but through continual practice.

In our session, some participants deliberately stopped playing, standing still, erasing marks, or refusing movement. These pauses were not disengagements but interventions: gestures that questioned tempo and inclusion. They reminded us of that coexistence also requires space for silence and rest. Designing for peace thus means designing for the possibility of not moving, for withdrawal, hesitation, and listening.

5.5 From metaphor to methodological proposal

Taken together, these reflections position *Hopscotch* as an exploratory method of coexistence. It integrates artistic play, participatory design, and ethical reflection into a flexible research framework. Rather than prescribing steps, it offers a rhythm: draw the court, invite others in, attend to what happens, and begin again. This rhythm aligns with structures of social relations [18], where researchers design the conditions for collaboration rather than its outcomes. It also resonates with peace-oriented design: sustaining dialogue through openness and care.

By treating play as both method and metaphor, *Hopscotch* contributes to participatory design's ongoing turn toward relational, sensory, and more-than-human practices. It shows how a simple, embodied act—marking a square, hopping between positions, can become a politics of empathy, a choreography of togetherness. Through movement, uncertainty, and shared rhythm, *Hopscotch* invites us to imagine research not as control, but as coexistence in motion.

6 Making the court

Hopscotch began as a metaphor for our own research rhythms—cycles of leaping, pausing, mis-stepping, and returning. Over time, it evolved into a methodological sensibility: an invitation to approach participatory research as movement, dialogue, and coexistence. Through play, we found language for the uncertainty, friction, and care that shape collaboration in art and design education.

We offer *Hopscotch* not as a fixed framework but as a call to reimagine method as relation. To draw a court is to mark a shared space; to throw the marker is to declare intention; to hop is to risk imbalance; to fall is to begin again. Each gesture embodies an ethic of participation: humility, responsiveness, and renewal. Within participatory design, this practice reframes the researcher as facilitator of rhythm rather than conductor of outcome, an agent of social relations, who enables others to move, speak, and redraw boundaries.

The method's value lies in its temporariness. Like chalk on pavement, it resists permanence and ownership. It teaches that

coexistence must be rehearsed continuously through moments of alignment and misalignment, joy and discomfort. This temporality echoes participatory design's deeper purpose: to cultivate the conditions for peace and dialogue, not as products but as processes in motion.

As an exploratory contribution, *Hopscotch* expands participatory design pedagogy toward playful coexistence. It demonstrates that play can function as an epistemic and ethical practice, one that privileges curiosity over control and conversation over conclusion. In times marked by fragmentation and speed, *Hopscotch* invites a slower, more reflective form of participation: one that honors embodied knowledge, relational care, and the courage to leap without knowing where one will land.

To future practitioners and researchers, we extend the same invitation; mark your court, make your throw, and move together, attentive, playful, and ready to start again.

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The Ladder of Data Citizen Participation in Evaluating News Recommender Systems

An Empirical Exploration through an Interdisciplinary Participatory Design Workshop

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Abstract

Drawing on a participatory design workshop with eight researchers from five academic disciplines, we use the Ladder of Data Citizen Participation as a heuristic to evaluate a recommender system schematic. We identify disciplinary differences in how participation is conceptualised, ranging from representation and technical transparency to democratic self-determination. We also reveal diverging temporal notions of when participation occurs. Reflexive thematic analysis of workshop data highlights tensions between participation and usability, market pressures, and normative design values. We find that current recommender system logic, especially with AI-driven stochastic systems, challenges conventional participatory frameworks. The Ladder proves effective for eliciting epistemological differences but less suitable for guiding participatory system design. Our findings suggest the need for interdisciplinary alignment on participation concepts as a prerequisite for designing recommender systems that serve the public good.

CCS Concepts

• **Human-centered computing** → **HCI theory, concepts and models; HCI design and evaluation methods.**

Keywords

Participatory Design, Recommender Systems, Online News, Interdisciplinarity, Data Citizenship

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1 Introduction

The past decade, since technological systems shape how information is distributed and consumed, has been characterised by an uphill battle for common ground [11]. Although findings on technologically-induced fragmentation, e.g. “filter bubbles”, are somewhat indifferent, participation in democratic dialogue is increasingly shaped by the mechanisms of the data economy [17].

Recommender systems (RS) catering information to individuals are particularly relevant in this development. Their recommendation logic is often criticised for fostering polarisation and hindering dialogue [12, 16, 20, 27]. This is neither good for users’ mental health [15] nor for democratic systems [28], and it is also not aligned with the type of experience users want from platforms [29]. Thus, besides establishing appropriate regulatory approaches that hold platforms accountable and aim to de-amplify extreme content [31], designing technologies through participatory methods is essential to ensure a match between system design, user needs, and core democratic requirements. Participation in a self-determinant and empowering manner is usually undermined by its implementation, often resembling mere tokenistic inclusion. Take, for example, the deceptive design of cookie consent forms, or Big Tech platforms’ advertisement and privacy settings.

These approaches become particularly problematic when they are extended to (formerly) trustworthy institutions such as news actors that, due to economic pressure, increasingly adhere to platform logics like the ones mentioned before or predominantly operate on them. With this, online news becomes a field that exemplifies complex challenges of democratic participation and conflicts between different actors, business models and societal values.

Tackling this challenge, this paper is grounded in the ANONYMISED project that analyses the feasibility of a democracy-friendly and privacy-preserving online news platform. With four participating

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universities and five disciplines within them, the project consortium represents a wide range of relevant expertise, from Sociology and Participatory IT Design to Business Informatics, Technical Informatics and Law.

In the following, we explore a method for mediating the disciplines' different perspectives on participation. The proposed method constitutes a speculative design workshop set around a conceptual lens – Horn and Draude's Ladder of Data Citizen Participation, a modernised heuristic, based on Arnstein's Ladder of Citizen Participation as well as Rocha's Ladder of Empowerment, adapted for the data economy. Further working with the method in the context of the ANONYMISED project, we focus on news recommender systems (NRS) as central objects of interest, by integrating them into the workshop through a design probe.

Employing a participatory approach, we explore how NRS could be designed under the premise of giving voice to people who interact with it. Taking the Ladder of Data Citizen Participation [18] as a heuristic to base this on, we mediate between the five different disciplines present in the ANONYMISED project. Our research question reads as follows:

(How) can the Ladder of Data Citizen Participation be used to enable participatory design across disciplines?

This is explored in the example of news recommender systems aimed at serving the public good. Our contribution, hence, is an analysis of a design workshop based on the Ladder of Data Citizen Participation [18]. We reveal issues in the design of the ladder, however we also show how it can be used in interdisciplinary scenarios.

2 Background

Participation in planning and decision-making processes in various areas such as healthcare, urban development, and environmental issues is a concept that is generally recognised as something worth pursuing. It promises to help democratising decision making and involves people influenced by those decisions' outcomes. There are frameworks and heuristics that critically analyse participation in practice and the challenges of implementing "true" participation. Furthermore, participation is sometimes mistakenly seen as the gold-standard for realising inclusion and fairness, while at the same time the work and emotional toll it can take on individuals is underestimated. In the worst case, this can lead to extractive and exploitative scenarios, such as participation in the design of machine learning applications [25]. Hence, participation frameworks can offer a nuanced perspective and can help to implement the particular participation needed in a specific project.

2.1 Ladder-based Participation Typologies

The ascension to higher levels of power is a central theme of the metaphor of ladder typologies. However, all three ladder-based frameworks presented have differing conceptualisations of citizen power with which come different goals of meaningful participation.

Prominently, Arnstein's Ladder of Citizen Participation aims to assess citizen involvement in the decision-making in public participation processes. Based on empirical insights from three federal programs in the US (urban renewal, anti-poverty, and model cities), it ranks citizen involvement in decision-making processes

by eight rungs. Through this, Arnstein's work also follows a rather provocative agenda, aiming at promoting a discussion on "non-" or "tokenistic" participation and emphasising the missing power of those who have no say at all.

Central to Arnstein's typology of participation is how decision power is distributed to citizens, progressively increasing as the ladder is climbed up and thus shifts away from the established "powerholders". Power is understood as "having power over" [10] meaning that the entity making use of its power is able to command another entity to do what they otherwise would not have done. Thus, citizen participation is understood as shifting decision authority, a redistribution of power to the ones (in Arnstein's language "have-nots") that formerly had no power at all. However, this redistribution is predominantly pinpointed and reduced to a very specific point in time, e.g., a specific program or project.

Roughly 30 years after Arnstein's work, in 1997, Rocha introduced the Ladder of Empowerment, establishing a cohesive typology offering conceptual clarity for the notion and definition of empowerment. Rocha's Ladder of Empowerment points more prominently to its potential usage by practitioners to clarify their own goals and strategies toward empowerment. It serves as a framework "by which personal, agency, or community values may be located with respect to possible courses of action" [21, p. 41]. Rocha's work also highlights the need to re-centre and account for the marginalised (the "have-nots") in power dynamics. Here, ascending the ladder means the empowerment of whole communities, eventually leading to political and legislative power to change the status quo. By that, empowerment goes far beyond single projects and, instead, addresses infrastructures and pursues general legal change.

2.2 Adopting to Today's Circumstances: The Ladder of Data Citizen Participation

Regarding design processes of current digital technologies and with the two other ladders being almost 60 and almost 30 years old, respectively, the need for new heuristics suited for data systems and sociotechnical imaginaries is apparent. Although there are already several methods that help to design data-driven systems more ethically [13], privacy-friendly [4], or human-centred [14], there is a lack of tools that specifically help to design data-driven systems for participation.

To fill this gap, Horn and Draude introduced the Ladder of Data Citizen Participation. It conceptually combines Arnstein's and Rocha's ladders, transferring the typology onto the field of the data economy. In it, participation becomes a socio-technical construct, spanning from simple digital interactions between citizens and data-driven services to community-led forms of data governance. Most importantly, however, the Ladder of Data Citizen Participation highlights that, due to the constant processes of data collection and data processing, participation partly becomes involuntary, ruling out the possibility of refusing to participate in data-economic processes.

2.3 Alternative Participation Frameworks

Further participation heuristics can broadly be divided into formative (see e.g. [19]), analytical (see e.g. [8]) and evaluative frameworks (see e.g. [23] and [26]). They describe cyclical steps of participation

(e.g. [19]) that go through different qualities and dimensions (e.g. [8]: process, field, actor, power and decision-making) of participation, highlighting challenges of evaluating participation processes due to the different natures of projects and the difficulty of assessing the quality of output on generalised criteria.

Beyond this, Schrögel and Kolleck developed the participatory “design cube”, a three-dimensional heuristic for participation processes. They claim to bridge the gap of showing “normative, epistemological and structural differences” of participation by providing a framework that spans three dimensions: reach, epistemic focus, and normative focus.

Lastly, ecologies of participation, a concept introduced, e.g., by Chilvers and Kearnes highlights the long-term and entangled qualities of participation procedures, and is, e.g., used to assess the outcomes of civic projects [22]. Using the lens of ecologies of participation widens the perspective on analysing the entanglement of actors, meanings (e.g., values, narratives, opinions) and forms of participation [22].

While such frameworks offer what might look like more profound heuristics of participation, we choose the Ladder of Data Citizen Participation [18] for our workshop for its critical quality in sparking conversations, its advocacy for user’s needs, its closeness to the application area of the data economy and its sociotechnical notion of participation.

3 Method

We conducted a participatory design workshop with members of the ANONYMISED research project, which drew on principles of participatory design and speculative design [3, 7]. By engaging project members in this workshop, we aimed to identify potential challenges and opportunities of participation in the design of NRS that are oriented towards the common good.

3.1 Workshop Design

The workshop was held online through videoconferencing as a three-hour speculative design activity. Moderation was conducted by two people from Participatory IT Design (author one and two) and one person from Sociology (author three) – two of them are also members of the ANONYMISED research project.

The workshop was structured around a series of short input session and activities (mostly based on the aforementioned materials), which were either held in breakout-sessions between two people or as a moderated group discussion in the shared top-level room.

3.1.1 Participants. A total of eight people from the disciplines of Technical Informatics, Participatory IT Design, Sociology, Law and Business Informatics took part in the online workshop. The group of workshop participants included three professors and five PhD students, as shown in Table 1. All participants and authors are employed at German universities and speak German.

3.1.2 Materials and Resources. First, we introduced the Ladder of Data Citizen Participation [18] as speculative design lens and translated it into a simplified visualisation to be used as design heuristic (see Figure 1). Participants were asked to reflect on it and identify the rung that best represented the kind of participation found in a respective step of the news recommendation process.

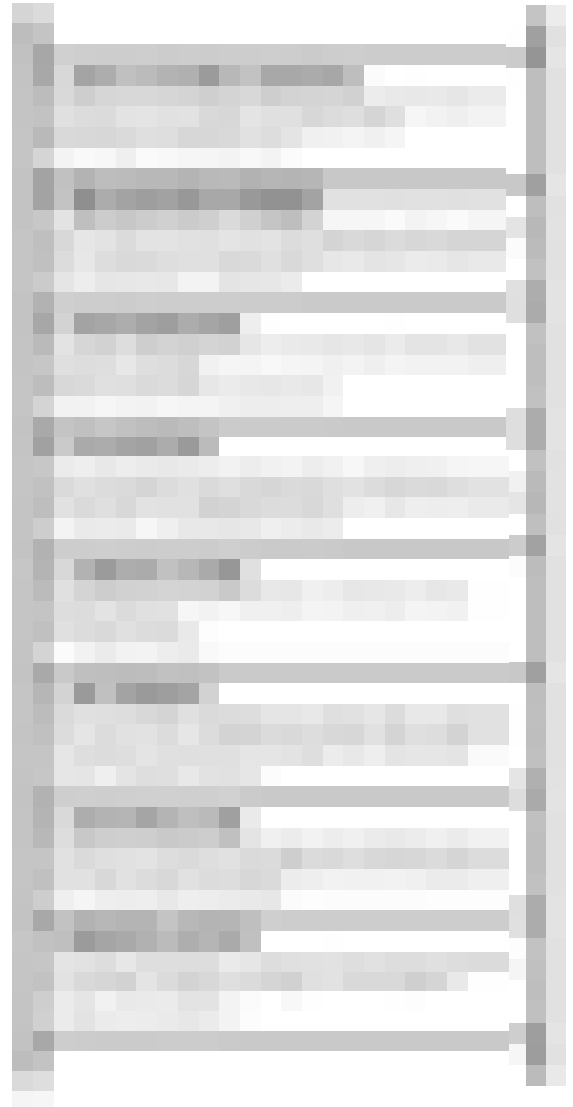


Figure 1: The Ladder of Data Citizen Participation as design lens as it was used in the workshop

Second, for a design probe, we created a simplified schematic depicting a NRS’ data flow (see Figure 2), loosely based on Google’s representation of their Vertex AI Matching Engine [1].

For conducting the online workshop around these core materials, we used the online whiteboarding tool Miro¹. Every workshop phase illustrated in Appendix A was represented by its own section in the Miro board. Participants had access to the Miro board without registration and received a short introductory tutorial in

¹<https://miro.com/>

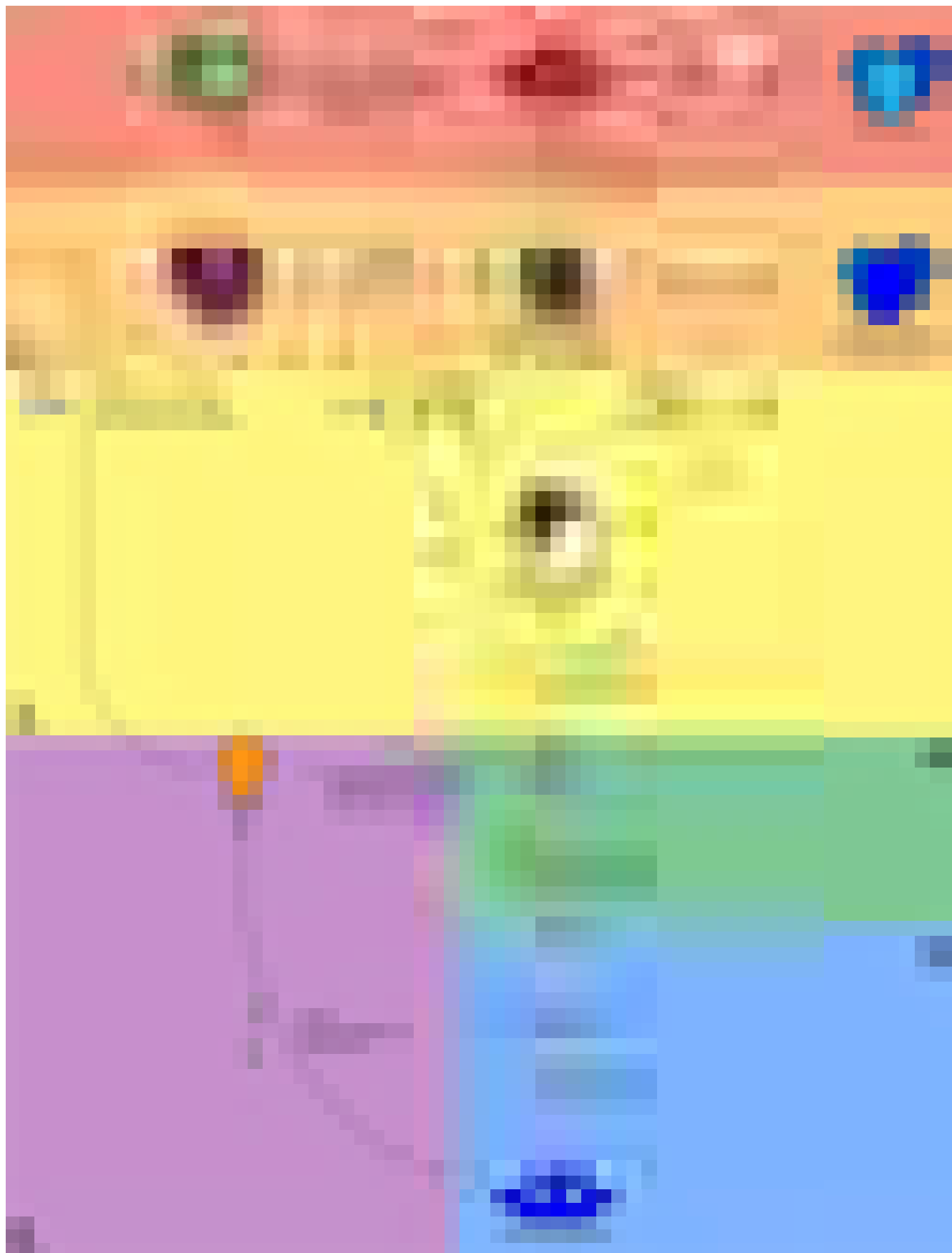


Figure 2: News Recommender System schematic used in the workshop

Table 1: Participants of the participatory workshop

Number	Discipline	Role
P1	Business Informatics	PhD Student
P2	Business Informatics	PhD Student
P3	Law	PhD Student
P4	Law	PhD Student
P5	Technical Informatics	PhD Student
P6	Technical Informatics	Professor
P7	Participatory IT Design	Professor
P8	Sociology	Professor

preparation for the workshop. To assess first-hand feedback on the workshop, participants were asked to fill out a short anonymous form, which was sent directly after the workshop using Google Forms². The form contained three open questions:

- (1) What was good or successful about the workshop?
- (2) What was not successful, difficult, or bad about the workshop?
- (3) Was the ladder useful as a heuristic tool and did you learn anything new (for your project)?

3.2 Data Collection and Analysis

We exported the Miro boards from the workshop, which included all the post-it notes and rearrangements created by participants during the workshop activities. The audio and video of the three-hour workshop were recorded using the Zoom videoconferencing tool Zoom³, transcribed, and pseudonymised. The transcript was then transferred to MaxQDA24⁴, a software tool specified for qualitative data analysis, which we used to code the material.

For data analysis, we used reflexive thematic analysis [6]. First, all authors familiarised themselves with the materials. The initial coding was conducted by one of the others. The inductive codes generated from the material were clustered along general categories related to the research questions. Then a second iteration of the coding was performed by author X and author X. After the coding process was completed, in a collaborative session of authors X, X, and X, the categories were clustered and the themes were generated based on the clusters. Those are reported in Table 2. All quotations were translated into English by the authors. Lastly, the responses to the feedback form were analysed to inform the assessment of the Ladder of Data Citizen Participation [18] as a design tool.

3.3 Researcher Positionality and Ethics Statement

Three of the four authors of this research paper are part of the ANONYMISED project, and therefore have previous work relationships and exchange with the participants. One of the authors (author four) has also participated in the workshop as a participant

themselves. In addition, project members have a personal interest in the outcome of the workshop as they might influence the ongoing of the project. Thus, the findings are presented and influenced by an inward perspective, implicitly taking prior discussions into account. Furthermore, the author team is constituted of interdisciplinary backgrounds, trained in human-computer interaction, sociology, computer science, and cultural and media studies. A commitment to critical and feminist principles guides our research efforts, and we conducted this work with an awareness of the limitations of our central-European (German-speaking) academic context.

Consent of participation and for data processing has been collected beforehand. The recorded audio and video data have been anonymised after transcription.

4 Results

In this section, we present our findings from conducting the workshop. We created this section following the example of Braun and Clarke in their Reflexive Thematic Analysis guide. Reflections on our findings that would usually be expected within the Discussion are presented together with their respective themes in this section to avoid repeating themes throughout two sections.

4.1 Theme 1: Normative Rankings

In phase 4 of the workshop, the respective discipline's described how they perceive rungs of participation in the status quo of how recommender systems operate. However, the Business Informatics participants instead assigned rungs as a normative judgment of where they should be in their opinion. This not only showed how the ladder can be used as normative tool, but also revealed that there might be steps in such a recommendation process where the highest rung is not desirable to (in this case) Business Informatics.

4.2 Theme 2: What Is Participation?

Participants revealed differing notions of what a good design outcome, and thereby also the goal of participating in the design of a news RS, might be. This was illustrated by a debate between P6 (Professor for Technical Informatics), P7 (Professor for Participatory IT Design) and P8 (Professor Sociology). P6 expressed a rather pragmatic and technology-centred approach to functionality:

²<https://docs.google.com/forms>

³<https://zoom.us/>

⁴<https://www.maxqda.com/>

Theme	Description
(1) Normative Rankings	The ladder can not only be used to reflect on the status quo of certain steps in recommendation systems but also as a normative tool to consider where one would like to see certain steps at. This elicited debates on which rungs are desirable.
(2) What Is Participation?	The question of what participation is was addressed multiple times. The debates evolved around different rankings as well as positions of the ranking in our schematic.
(3) Where Is Participation?	Placing the ranks on the ladder also revealed information where and how participants think participation occurs.
(4) When Is Participation?	Participation is viewed either as a process or as a one-time event, with both notions having implications on the design process.
(5) Paternalism or Consultation	The question of how indirect participation (due to economic pressure, or lack of information) should be classified arose from the task.
(6) Intent and Sub-symbolic Systems	Throughout the workshop, participants struggled to reconcile their notions of participation (as well as the ladder's rungs) with modern, sub-symbolic systems like Large Language Models.

Table 2: Overview of the themes and their short descriptions

“Essentially, it’s about making sure the thing **works and doesn’t break**. For others, it would be things like being safe, secure or bias-free.” [P6]

To which, among other comments, P8 replied:

“What does **functioning well mean**?” [P8]

This snippet shows how the ladder elicited debates on the very nature of participation, a disciplinary clash observed not only in the fundamental question of what participation means but also where it takes place.

4.3 Theme 3: Where Is Participation?

Another top-level observation from phases 4 and 5 of the workshop is the difference in where rungs were attributed in our schematic. Whereas all other disciplines labelled actors (e.g. news article authors, the black box encoder system, ...), Technical Informatics labelled edges in the schematic, arguing more from a data-flow driven perspective. This was also expressed as a consideration of data processing concerns, akin to, e.g., transparency issues in processing steps.

“We labelled edges, we didn’t consider the poor users to be universally treated paternalistically, rather, we think, **this was about identifying processing steps**, i.e. edges, where there might be **non-transparency** or data flows...” [P6]

This shows not only how differently various disciplines view artifacts when it comes to participation, but also how the issue of a participatory rung is equated to common top-level issues of information systems, e.g., transparency.

4.4 Theme 4: When Is Participation?

P6 (Professor for Technical Informatics) expresses, again, a rather technology-centred notion of when design (and thus participation in the creation of a system) takes place:

“Design takes place **once at the beginning** and then there is something like an evolution.” [P6]

This notion only considers the efficacy of the programmers “designing” (i.e. thinking and implementing) the system. However, this adds a temporal layer to the ladder and its use in the design process. Reflection on when participation is possible leads to some of the participants repeatedly expressing that participation is a one-time event and non-continuous action. This is also expressed by Business Informatics, as they see participation as something happening after the fact, e.g. with users choosing which black box caters information to them.

4.5 Theme 5: Paternalism or Consultation

What initially appears to be a disciplinary difference reveals a discrepancy between the ratings Sociology and Participatory IT Design assign to the upper-right half of our schematic (see Figure 3) and the rung at which Law places this step. Regarding the processing of news items for recommendation, as well as the processing of news items for recommendation model training, Sociology and Participatory IT Design see unwilling, unwitting contribution due to economic pressure or outright illegal scraping. Law, on the other hand, saw this step as a consultation process, where system designers and news producers jointly confer on a topic. Besides the disciplinary differences, this points towards a need for clarification on both intent and deliberate withholding of knowledge (e.g. on what sources were used for training) when using the ladder to assign rungs.

On a similar note, P2 (PhD Student Business Informatics) expressed concern on how participation can be implemented meaningfully in the design of a complex system like a RS:

“[...] the question is of course also whether they have the **technical know-how**, theoretically also, to be able to do this at all (participating), and **whether they should** be in full control [...]” [P2]

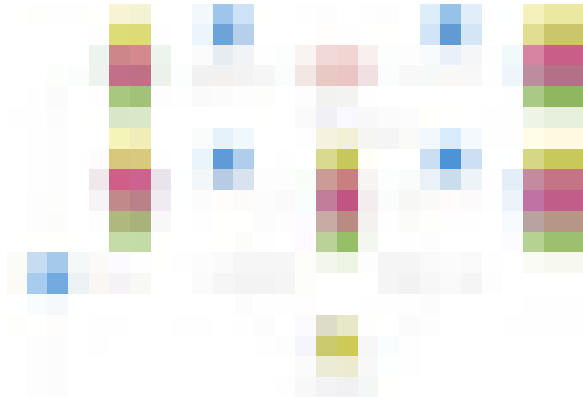


Figure 3: Upper half of the RS figure with the respective discipline's ladder ratings (yellow = Business Informatics, magenta = Sociology & Participatory IT Design, green = law, blue = Technical Informatics)



Figure 4: Lower half of the RS figure with the respective discipline's ladder ratings (yellow = Business Informatics, magenta = Sociology & Participatory IT Design, green = law, blue = Technical Informatics)

A notion that other participants, again, viewed as paternalistic. This reveals a key strength of the workshop design, as showing the complexity of the topic and different steps in which rungs can be implied to elicit discussions on the matter of expertise. P6 (Professor for Technical Informatics) expressed a similar notion, speaking of “expert committees” as a feasible way to integrate participation into the software design cycle.

4.6 Theme 6: Intent and Sub-symbolic Systems

Participatory IT Design and Sociology noted that while they did assign the black box encoder (see Figure 3) and retrieval of top-N recommendations (see Figure 4) a 1 for Manipulation due to the procurement of indexed content, the rung definition is not contemporary any more (as indicated by their bracketing of rankings). Manipulation, they argued, presupposes intent, which cannot be attributed to purely stochastic systems such as Large Language Models. The rung:

fits the form of **cybernetic control** only in a limited way. [P8]

Business Informatics, who (going from a wrong assumption of assigning normative rankings) ranked the black box system an 8 for Data Citizen Control (the highest rung) explain this ranking with an ideal of how such a system could be integrated. Namely, they express a wish for a choice of black box, i.e. users should be able to choose which kind of recommender they are using – the specific inner workings of the system would then not be as relevant. This is a stark contrast to all other disciplines that, even if there is a choice of black box, still considered this rung 2 (Paternalism) at best. We treat this as another indicator for how stochastic systems escape the logic of the ladder.

The same pattern of argumentation from the Business Informatics side (and disagreement from the other disciplines) could be observed in the filtering process (see Figure 4), where Business Informatics, once more, gave a ranking of 8, arguing that users could simply decide which content they would like to filter out. This evoked a discussion on biases and shows a clear difference in the understanding of participation that different disciplines harbour. The ladder was instrumental initiating these debates, which might be worth considering for future workshops.

5 Discussion and Future Research

We investigate the utilisation of the Ladder of Data Citizen Participation [18] in the context of a NRS for the public good through an online participatory workshop. We find it only partially suitable as a tool for alignment (of a to-be-designed technology with higher rungs), as participants – also depending on the respective discipline – struggled to develop ideas for the higher rungs and to grasp how to design for more sophisticated levels of participation. The ladder functioned more as a tool to show “how not do it”.

Regarding the general critique on ladder-based approaches in literature, e.g., that they suggest “easy cut-off points between dichotomised positions” [8, p. 76], or that solely focusing on levels of participation does not provide comprehensive assessment of outcomes [26], we emphasise that, in the context of design, complementary dimensions such as procedural aspects, different actors and ecosystemic entanglements are required. Still, the ladder proves to be well-suited for surfacing epistemological differences (e.g., between different disciplines) of participants and our findings suggest that the ladder was a feasible way of fostering critical discussions on participation in the respective context.

Furthermore, while the Ladder of Data Citizen Participation [18] particularly refers to digital services in the data economy, the recent emergence of AI challenges the heuristic. Although rungs such as Manipulation (see rung 1 in Figure 1) and Paternalism (see rung 2 in Figure 1) apply for digital services designed with a cybernetic control logic, they fail to fully address contemporary stochastic logics, e.g. in their distribution of agency. Therefore, an updated participatory heuristic, addressing the terminologies and challenges of participatory AI [5], as well as endeavours of algorithmic governance and oversight is crucial.

Our work shows that taking into account different disciplinary perspectives is a critical first step in a participatory design process and maybe even a precursor to speculating for alternative futures.

However, our workshop participants were solely project stakeholders from an academic background. Thus, the results are skewed by an academic perspective, not taking into account the practical realities of building NRS. Those include but are not limited to: business considerations, misconceptions and reservations of particular stakeholders, and differing stakeholder values [30]. Lastly, users' perspectives, beyond academic users, are not represented. Future research should therefore apply our workshop design to practical contexts and, most importantly, elicit participation needs and understandings from news platform users, as well as journalists and industry partners.

Acknowledgments

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A Workshop Structure

Table 3: Structure and design activities of the participatory workshop

Workshop Phase	Workshop Activities	Format
Phase 1: Introduction	The scope of the workshop was introduced, participants had the possibility to familiarise themselves with the online workshop environment. The Ladder of Data Citizen Participation was explained	Input by Moderators
Phase 2: Identifying disciplinary participation formats	Participants were asked to split into disciplinary groups and collect formats of participation known in their discipline; Results were then presented in the top-level group	Break-Out Sessions; Presentation in top-level group
Phase 3: Introduction of the RS design probe	The RS probe was introduced, the participants asked clarifying questions	Input by Moderators
Phase 4: Identifying forms of participation in news RS	Participants split again into disciplinary groups and were tasked to use the Ladder of Data Citizen Participation as a speculative lens for identifying current forms of participation in the context of news RS	Break-Out Sessions
Phase 5: Discussing similarities and identified design challenges of participation in RS	The post-its of phase 4 were transferred to a collective RS design probe. Based on the gathered results, participation issues were discussed openly within the whole group	Moderated group session
Phase 6: Identifying central design issues of RS	Every disciplinary group was tasked to name one central issue when it comes to participation and explain it to the group	Task split between disciplinary groups
Phase 7: Identifying relevant socio-technical design elements of RS	every disciplinary group was asked to name socio-technical design elements based on the questions “ <i>How can the issues of participation be addressed?</i> ” and “ <i>What are socio-technical framework conditions for addressing the participation issues?</i> ”. Ideas were again collected via post-its in a dedicated space on the Miro board called “scope for design”	Task split between disciplinary groups
Phase 8: Discussing how to reach higher levels of participation	Based on the socio-technical design elements identified the groups were asked to discuss how to potentially design for higher levels of participation exemplified by the ladder	Moderated group session

Opportunities for Participatory Design in Shaping Australia's Data Centre Futures

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Abstract

This paper examines how Participatory Design (PD) can be scaled to address 'vertical inequities' emerging between industry and government actors, and local communities and environments through Australia's expanding data centre industry. Drawing on document analysis, and interviews with experts and community members in Sydney, the study identifies four disparities between industry and government imaginaries for Australia - a regional data centre hub, resilient and sovereign digital futures, economic expansion, and capitalising on 'temporary' investment opportunities - and the lived, material realities of communities living alongside data centre developments. Building on these findings, the paper contributes to discussions on scaling PD by exploring how PD can attend to vertical inequities by: (i) building critical data centre literacy; (ii) fostering transparency in sustainability governance; and (iii) broadening dominant visions of data centre futures to include community aspirations. Together, these interventions highlight PD's potential to cultivate more inclusive and sustainable data centre futures.

CCS Concepts

• Human-Centered Computing; • Interaction design; • Interaction design processes and methods; • Participatory design;

Keywords

Participatory design, Vertical Inequities, Data centres, Industry, Government, Communities

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1 Introduction

A central value of Participatory Design (PD) is its commitment to democracy and emancipatory practice, ensuring that those most affected by technologies, systems, and infrastructures play a meaningful role in shaping them [25]. Historically, PD has focused on the local scale, supporting workers, users, and communities to influence the design of artefacts and practices that directly impact

their everyday lives [3]. More recent scholarship, however, has emphasised the need to scale PD - *by place*, through engagement with broader spatial and infrastructural contexts; *by replication*, through the extension of practices across settings; and *by time*, through futuring and anticipatory approaches that attend to long-term consequences [3, 25].

This paper contributes to these discussions by examining how PD might address the *vertical inequities* emerging from the global expansion of the data centre industry and its material impacts. Vertical inequities arise when decisions and benefits are concentrated at the top, in national governments, regulatory regimes, and multinational corporations, while costs and burdens are borne locally by communities and environments [12]. These inequities are legitimised through sociotechnical imaginaries [10]: collectively held visions of desirable futures projected by state and industry actors and stabilised through material and political interventions. Such imaginaries appear "clean" and forward-looking yet obscure the messy realities and uneven consequences experienced 'on the ground'.

Drawing on Australia's rapidly expanding data centre industry, this paper examines how PD might respond to disparities between dominant industry-led imaginaries and the lived realities of communities and environments situated alongside these infrastructures. By conceptualising these disparities as vertical inequities, the paper identifies opportunities for PD values and processes to intervene by unsettling dominant imaginaries and broadening pathways toward more inclusive and sustainable data centre futures that reflect local values, aspirations, and lived realities.

2 The Australian Data Centre Industry

Data centres, often referred to as 'the cloud', enable internet and AI services that modern digital societies rely upon [24]. They are high-security facilities that house rows of servers, networking equipment, and cooling systems to enable the processing, storage, and transmission of digital data [13, 24]. They are material and resource intensive, requiring land, minerals, high volumes of energy and water, and their size, and continuous operation, security lighting, and cooling infrastructure can substantially alter the visual and sonic character of surrounding areas [5].

Australia's data centre industry is at the precipice of a major expansion. The Federal Government's recent National AI plan has forecast over \$100bn in investments in data centre infrastructure before 2030 to cater to growing national demand for AI and cloud services [7], and to realise Australia's potential as a leader in 'green' digital infrastructure and a data centre hub for the Asia-Pacific Region [1, 7]. Sydney and Melbourne are two primary locations



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for planned data centre expansion because they provide proximate access to 40% of Australia’s internet users, vital energy, water and telecommunications infrastructure, coastal ports and undersea cables [13].

However, there is major deficit in qualitative understandings of how Australia’s data centre industry is experienced by local communities living and working alongside these digital infrastructures [5]. In fact, communities are largely excluded from how Australia’s data centre futures are imagined and designed – a process currently led by industry and national and state governments [7]. This exclusion risks misalignment between government, industry, and local values and priorities, the erosion of public trust, and the collective capacity to successfully realise the vision of the National AI plan [7], as has been demonstrated overseas [6, 8, 24]. For instance, the Prince William Digital Gateway project in Virginia, USA has caused unexpected water and energy price hikes, water shortages, and the degradation of valued natural and historical sites, prompting multiple community-initiated lawsuits and the stalling of a project expected to introduce US\$24.7bn in new investment and US\$400 million in annual tax revenue [6, 8].

Similar community pushback can be expected in Australia given the influence of data centre expansion on local amenity, and the realizing of intersecting government priorities (e.g. net zero and affordable housing) [14, 17]. Furthermore, the rapid expansion of Australia’s data centre industry risks reproducing the vertical inequities already seen elsewhere if proactive measures are not taken. Although the sector is currently experiencing significant growth, it remains at a relatively early stage of development. This presents a critical window of opportunity to embed more sustainable, equitable, and inclusive practices before extractive models become entrenched.

3 An Opportunity for Participatory Design

Participatory Design (PD) offers a critical orientation for engaging with the vertical inequities identified in Australia’s emerging data centre sector. Rooted in values of democracy, mutual learning, and the design of possible futures, PD provides tools to support mutual learning between diverse actors, surface hidden or under-acknowledged experiences, and codesign interventions to redistribute decision-making powers [22, 25]. By embedding the voices of communities and local government into conversations typically dominated by multinational corporations and federal and state agencies, PD has the capacity to make visible the misalignments between industry imaginaries and lived realities, and to generate processes through which these inequities can be recognised, negotiated, and addressed.

Beyond these potential applications, this exploratory research also intends to contribute to ongoing discussions about scaling PD. PD has traditionally been seen to operate in small, localised contexts, focusing on the quality of interactions and learning between researchers and participant design partners [3, 27]. In recent years, researchers have explored a number of approaches to scale PD practices, projects, and impacts. In their study of scaling PD, Bossen et al [3] describe three types of scaling that have been practiced by PD researchers: (i) *socio-spatial scaling*, where PD extends beyond initial project groups, transferring outcomes to new communities,

organisations, and places e.g. [2]; (ii) *temporal scaling* where PD evolves across interconnected projects and diffusing knowledge over time e.g. [9], and (iii) *onto-epistemological scaling* which draws attention to the diversification of PD across geographies and epistemic traditions, acknowledging the coexistence of multiple worlds and complicating socio-spatial and temporal framings [e.g. 27].

This paper contributes to ongoing debates on scale by examining how Participatory Design can be applied to address the vertical inequities that arise when the imaginaries of corporate and government actors come to shape the lived realities of local communities and environments on the ground. Using the example of Australia’s data centre industry, this paper argues that PD can be mobilised not only to redistribute influence across actors in industries structured by vertical inequities, but also to broaden the imaginaries through which the futures of digital infrastructures are envisioned.

4 The Study

This article reports on an exploratory study designed to inform a larger research project examining how to cultivate inclusive and sustainable data centre futures in Australia, with a particular focus on the city of Sydney, Australia which is currently the country’s fastest growing data centre hub. Sydney currently hosts approximately 90 of Australia’s 250 operational data centres, a figure projected to grow substantially by 2030 [13, 14, 17]. The city has become a favourable site for investment in the Asia-Pacific region because of its combination of stable regulatory settings, industrial land availability, access to energy and water resources, and submarine cable landing points that connect Sydney-based data centres to the global fibre-optic network [13, 14]. Large clusters of facilities ranging from 50 to 450 MW (megawatts) have emerged in industrial precincts in Northern and Western Sydney, generating new and underexplored challenges for local communities and environments [5]. Against this backdrop, the study aims to unveil some vertical inequities emerging between the “clean” imaginaries of the data centre industry and the lived realities of communities living alongside data centre developments in Sydney and then speculate on how PD might intervene and create more opportunities for sustainable and inclusive data centre futures.

4.1 Conceptual Framework

This research draws from two interrelated concepts to examine the evolving relationship between the data centre industry and local communities, from past and present dynamics to future possibilities. The first is the concept of *sociotechnical imaginaries* [10], which are collectively held, institutionally stabilised, and publicly performed visions of desirable futures that are animated by shared understandings of science and technology. They are not just ideas but normative frameworks that shape policy, innovation trajectories, and governance, while also influencing how societies envision themselves and their futures. The second concept is *ecologies of infrastructure* [21], which conceptualizes infrastructures as relational systems that are embedded within, and continuously shaped by social, political, technological, economic, and ecological contexts.

4.2 Data collection and analysis

This exploratory study drew on three qualitative data collection activities to develop an initial understanding of industry imaginaries and local community experiences. First, a rapid review of 48 documents related to Australia's data centre industry was conducted, including government strategies, industry and consultancy reports, and policy documents. Second, ten semi-structured interviews were undertaken with representatives from data centre companies, state government agencies, and energy and water utilities. Third, six semi-structured interviews were conducted with community leaders in Western and Northern Sydney, where data centre development is concentrated.

All interviews were audio-recorded and transcribed. Transcripts and supporting documents were imported into NVivo and iteratively coded in relation to two research questions: (i) what imaginaries underpin the expansion of the Australian data centre industry, and (ii) how do these imaginaries align with community experience and perception? Through cycles of coding and refinement, four overarching themes were developed, which structure the findings presented in this paper.

5 Tensions between Dominant Imaginaries and Lived Realities

The analysis surfaced four key tensions between the future-oriented imaginaries promoted by industry and government and the lived, material realities of local communities. Given the exploratory nature of this paper, these tensions are presented as prompts for identifying opportunities for PD rather than as detailed empirical findings.

5.1 A “sustainable” regional data centre hub

A dominant imaginary shaping Australia's digital infrastructure expansion positions the country as a regional hub for data centres and cloud services. This vision has gained momentum amid growing constraints in Asian markets such as Singapore, which temporarily paused development due to land and grid limitations [4]. With limited capacity elsewhere, developers increasingly view Australia as the next frontier. Sydney and Melbourne are promoted as preferred locations due to available industrial land, regulatory stability, and proximity to high-capacity electricity, water, and submarine cable landing stations [13, 14].

Industry and government frame this positioning as an opportunity to establish Australia as a leader in sustainable digital innovation, where renewable energy can be “exported” through data [1, 16]. This advantage is linked to renewable energy zones (REZs), which are presented as enabling hyperscale growth while avoiding carbon and grid constraints seen elsewhere. As Occhipinti, Prodan, and Green [16] observed: *“Australia has the opportunity to create a new frontier of competitive advantage in sustainable digital infrastructure by aligning the rapid growth of data centres with the expansion of renewable energy and grid integration.”*

Yet while sustainability is repeatedly emphasised as Australia's “point of difference”, the reality of linking data centres directly to renewable energy is complex. Developers continue to cluster facilities in urban areas close to users, fibre networks, and established infrastructures, while major REZs are located hundreds of

kilometres away in regional NSW and Victoria [26]. This spatial separation limits direct renewable integration, reinforcing reliance on renewable energy certificates and power purchase agreements [14, 26]. Several interviewees also questioned the long-term sustainability of current facilities, noting they are designed for present AI and cloud demands but may quickly become technologically redundant.

Finally, sustainability narratives underplay environmental impacts on the ground. Data centres consume high volumes of energy and water, yet usage data and offsetting strategies are often opaque [14]. Water use, a critical concern in drought-prone regions of the Country receives little scrutiny. Resource managers stated that they were exploring recycled or stormwater sources, but little information is available on allocation during scarcity or trade-offs between industrial and residential demand. Community members also reported constant concern about data centre water usage, as well as noise and light pollution, with one community member noting: *“This used to be a serene place next to bushland. And now there is a constant hum. And all that light. I don't know how it's affecting the native flora and fauna.”*

5.2 Resilient and sovereign digital futures

A second imaginary shaping the sector is that of digital and data sovereignty. Like many nations, Australia is investing heavily in domestic digital infrastructure to ensure that data is stored and processed within its jurisdiction, governed by national regulations [18]. The federal government has elevated data centres to the status of “critical infrastructure”, placing them alongside hospitals and utilities [7]. This policy framing presents data centres as indispensable to national security, resilience, and autonomy in an era of heightened geopolitical uncertainty.

Industry actors reinforce this narrative by linking sovereignty to scale. Developers promote hyperscale facilities as proof of capacity to host resource-intensive technologies such as AI and quantum computing, emphasising “bigger is better” in investment pitches [18]. Sovereignty and resilience converge in imaginaries where large-scale infrastructures signify preparedness and economic opportunity [7].

This framing obscures tensions. Sovereignty is advanced through privately owned infrastructures, raising questions about whether public interests can be safeguarded. One government representative described how NSW government recently created an “Investment Delivery Authority” [15] to fast-track private developments, *“potentially prioritising short term economic gain over long-term sustainability”*. Sovereignty imaginaries also risk reproducing colonial logics of extraction, with governments and industry positioning Australia as an exporter of renewable energy through digital services to parts of Asia where data centre growth is constrained [4]. This recalls extractive histories where Australian land and resources were mobilised for external markets while local communities bore social and environmental costs. As one community representative reflected: *“I understand the importance of having our data here, but our community and environment is going to bear the burden of this...and there is not much we can do about it.”*

At the same time, community members demonstrated very low awareness about data centre development plans, the implications of

data sovereignty, and how data centres would shape their community and environments in the short- and long-term implications of development. This lack of understanding contributed to an absence of transparency and inclusion in decision-making processes that will have lasting impacts.

5.3 Economic expansion

A third key imaginary emphasises the economic benefits that data centres might bring. Government and industry actors frequently describe the sector as a magnet for investment, jobs, and innovation, framing it as a “cornerstone of the digital economy” [7]. Industry reports present the scale of capital inflows as evidence of Australia’s attractiveness to global technology companies, while job creation is highlighted as a rationale for community support [7].

In practice, however, the economic benefits are often uneven and abstract. As one council worker outlined, *“jobs generated during the construction phase are temporary...once operational data centres employ far less people than another industry taking up a similar land area”*. Furthermore, these jobs are unlikely to go to local residents because they are highly specialised and require advanced technical training [14, 17]. Community representatives expressed concern around the impact on local economy. *“There are days where no one is around and it’s not great for local businesses”*.

At the same time, there are tangible economic burdens worn by communities. For instance, communities reported rising costs of land, water, and energy linked to the clustering of facilities. For instance, in parts of Sydney’s West, industrial land values have almost doubled, which has been linked to land purchases at premium prices by data centre developers [11]. This has complicated plans for affordable housing, as areas earmarked for low-cost housing development are simultaneously being targeted by the industry. For lower socio-economic communities, the impact could mean displacement and further economic inequality in future.

5.4 Capitalising on ‘temporary’ investment opportunities

A final imaginary that permeated both government and industry narratives is an urgency to ‘act now’ in fear that Australia will miss the boat on temporary and plentiful investment opportunities. Alongside this urgency, is an assumption that policymakers and resource providers will do what they can to support data centre developers quickly secure appropriate grid access, water security, and planning approvals, as demonstrated in this quote from a submission made by data centre developers to the independent energy market operator, *‘While there is a race for global capital, Australia is seen as an attractive location for data centre investment.... The next five years will be key to laying the groundwork for Australia to reach its potential’* [23].

This sense of urgency legitimises fast-track approval mechanisms and shortens timelines for consultation and coordination, as demonstrated by the NSW treasury’s creation of the aforementioned Industry Development Authority [15]. Whilst industry actors argue that rapid development is necessary to remain competitive, operating under conditions of speed and urgency compromise the potential

for governments, resource managers, communities, and other relevant actors to effectively coordinate the industry trajectory with other key priorities.

Firstly, it makes it challenging to integrate the industry with broader sustainability and planning goals, such as net zero and affordable housing. For instance, participants reported that some lands earmarked for housing were being purchased by data centre developers in both Northern and Western Sydney. One expert described how *“regulators have been caught ‘on the hop’ and are madly trying to catch up to industry and work out what to prioritise”*. Furthermore, the pace that the industry is moving is disrupting the potential for sustainability planning. For example, one expert describes *“If we have time and space we can design some water efficiency innovations... in some cases we aren’t able to do that because of the pace things are moving and the time it takes to build the infrastructure”*.

Secondly, the current governance system excludes any genuine opportunities for community to contribute to data centre design so it can better align with local values and priorities. Consultation can become perfunctory, with residents and Local Governments often learning of projects in the later planning stages. A council planner explained: *“We are just another stakeholder in this process. We don’t have any real power to change things – it’s really up to the developer to speak to the community and incorporate their thoughts ... that does slow things down”*.

6 Potential for Participatory Design to Negotiate Vertical Inequities

The findings demonstrate how the imaginaries that frame Australia’s emerging data centre sector – as a regional hub, an instrument of sovereignty, as an economic driver, and as a temporary investment opportunity – are met with tensions and alternative priorities when materialised in local contexts. These tensions can be understood as vertical inequities or asymmetries of knowledge, visibility, and power that flow from national and corporate levels down to local communities and environments that live alongside these infrastructures. Participatory Design (PD) offers values, approaches, and methods that may help to make visible and attend to these inequities. Whilst PD cannot undo the structural imbalances of capital, policy, and governance that drive the industry, it can create spaces where alternative knowledges, visions, and aspirations gain visibility, and where tensions in possible futures might be surfaced, negotiated, and reconfigured. Three areas stand out as particularly relevant: the cultivation of critical data centre literacy, the fostering of transparency in sustainability governance, and the broadening of desirable futures to include the perceptions, fears, and aspirations of local communities living alongside data centres.

PD has long been rooted in the principle of mutual learning to empower communities [22]. Within the data centre industry, however, significant inequities exist in who holds knowledge and shapes its future. This research has demonstrated firstly, that whilst industry and government actors promote techno-optimistic visions of the future (e.g. Australia as a ‘green’ data centre hub, a strong digital economy), the lived experiences of communities living near to data centre clusters (e.g. noise and light pollution, uncertainty around water and energy use, and potential rises in the cost of

living) are often overlooked. Facilitating dialogue among diverse stakeholders and fostering mutual learning about their experiences and future aspirations can help bridge these divides, broadening dominant future imaginaries to include community perspectives and aspirations [2, 22]. Through this process, PD can also advance critical data centre literacy, enabling communities to question sustainability claims, understand cumulative impacts, and challenge industry narratives - ultimately shaping the industry to more intentionally reflect local values and priorities. Importantly, literacy here is not a one-way transfer of expertise or 'consultation' as is often the case in planning processes, but a dialogical process where industry, government, and communities learn from each other's priorities and perspectives to navigate tensions and codesign future possibilities.

Secondly, transparency and equitable access to information are essential for supporting democratic processes and addressing power imbalances within the data centre industry. Our findings reveal significant opacity, particularly in sustainability reporting (e.g., energy and water consumption) and in developers' plans to align with broader priorities such as net-zero targets and housing affordability. Currently, sustainability reporting for data centres lacks effective regulation, limiting the ability of governments, resource managers, and communities to make informed contributions to industry planning. PD can help address these gaps by introducing participatory mechanisms - such as co-designed reporting frameworks and open deliberative processes - that make visible who benefits, who bears the costs, and how these impacts are distributed [27]. Such processes foster dialogue among communities, industry, and government, build trust, and inform policy development. However, these efforts depend on all stakeholders valuing transparency and committing to meaningful participation.

Finally, a core tenet of PD is engaging with future possibilities and shaping desirable futures. At present, industry imaginaries frame the future in narrow terms - sovereign, secure, competitive, and sustainable - primarily through abstract, economic lenses. Missing from these visions are futures grounded in community fears and aspirations relating to their everyday lives - affordable housing, equitable access to water and energy, thriving green spaces, and trustworthy relationships with industry and state agencies. Participatory futuring methods, such as speculative design fictions and scenario-building [20, 21] can expand what is considered possible and negotiable. By broadening dominant visions of desirable data centre futures by incorporating the perspectives and aspirations of community members, PD can directly challenge established vertical inequities and create new pathways towards more inclusive and sustainable data centre futures.

7 Conclusion

This study contributes to ongoing discussions about scaling Participatory Design (PD) by exploring how it can address the vertical inequities shaping Australia's data centre industry. Through an analysis of the gap between four dominant imaginaries promoted by industry and government and the lived, material realities of communities situated near data centre developments in Sydney, the research underscores the need for participatory approaches that prioritize equity and inclusion. It demonstrates how PD values

and practices can be mobilized to unsettle dominant framings and enable the co-creation of more inclusive and sustainable data centre futures.

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Seeing, Thinking, Sharing, Sensing Small Data. A Participatory Framework to Connect Citizens' Experiences with Urban Governance

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Abstract

This paper proposes a methodological framework for integrating small data into participatory approaches for urban governance. It conceptualises four interrelated practices – *seeing with, thinking through, sharing through, and sensing small data* – to articulate how data can be mobilised to bridge lived urban experience with institutional knowledge. The framework explores how locally generated, experientially grounded, and socially mediated forms of data can complement large-scale datasets by embedding observation, interpretation, co-creation, and embodied participation in everyday life. Developed and tested through participatory workshops in Lugano, Switzerland, the research argues how small data on urban waste management operate as a relational and reflective medium that enable citizens to express situated perspectives and engage in collective sense-making. Initial findings and reflections on overall practices underscore the potential of participatory practices to incentivise small data to reveal the multilevel dynamics of urban systems and foster more inclusive and context-sensitive forms of governance.

CCS Concepts

• **Human-centered computing** → **Participatory design**; **Visualization design and evaluation methods**; • **Information systems** → **Spatial-temporal systems**.

Keywords

small data, participatory design, urban governance, civic engagement

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1 Introduction

Data has become a primary medium through which contemporary cities are managed and understood. Dominant approaches in urban governance rely on large-scale sensing and statistical infrastructures that prioritise prediction and efficiency, overlooking the lived experiences, tacit knowledge, and cultural practices shaping urban life. This paper argues that small data – data generated through situated experiences – complements large datasets in urban governance by grounding urban inquiry in everyday experience. The discussion unfolds in three parts. First, a literature review traces how small data has been conceptualised across research and design traditions,



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highlighting its role as both lived practice and cultural material, and its value in participatory contexts, as a medium for dialogue and reflection. Building on this, the paper proposes four interrelated methodological practices – *seeing with, thinking through, sharing through, and sensing small data* – conceived as dialogical processes through which data acquires meaning from cultural and social life. The proposed framework emerges from the Bluecity project, an Innosuisse-funded research initiative exploring the role of digital twins and data science in the urban context of Lausanne, Switzerland, and was developed through a series of participatory activities involving citizens that informed and shaped its formulation. Within the main purpose of the project, which concentrates on predictive analytics and large-scale infrastructures, our contribution focuses on participatory methods to reframe data as a medium for connecting citizens' collective experiences with urban governance. A case study in Lugano centred on waste management as a concrete field for exploring how small data can reveal the interconnections between infrastructures, behaviours, and cultural practices shaping everyday urban life. The topic provided the occasion to connect municipal datasets to everyday practices through workshops with citizens and students, fostering dialogue and collaborative interpretation. The paper concludes by highlighting key insights: the value of prototyping and mapping as participatory tools, the role of enabling technologies in empowering small-scale data practices, and the need to sustain dialogue between citizens, institutions, and urban governance.

2 Small Data as Situated Meaning

The rise of big data brought claims that large-scale datasets could revolutionise knowledge production across domains such as health-care, commerce, and urban governance. While these systems reveal powerful correlations [5], they have been criticised for reducing complex lived experience to abstract, standardised categories [2, 33]. In response to this abstraction, scholars have turned their attention to small data as a way to ground data practices in lived, contextual realities. Rather than being defined by scale, small data is understood through its proximity to experience and its capacity to reflect everyday life. The concept of “small data, where $n = me$ ” captures how the traces generated through daily routines can yield valuable insight precisely because they remain close to individual contexts [10]. In health research, this orientation supports adaptive feedback processes that align interventions with personal trajectories rather than universal population models [14]. Similarly, in urban and social contexts, small data exposes and challenges the blind spots of data-intensive infrastructures, particularly within marginalised or resource-constrained communities [13]. Through these perspectives, specificity and responsiveness emerge as methodological principles that keep data connected to the realities it represents. At a conceptual level, small data has been framed as a mode of theorising that draws attention to the cultural and institutional conditions shaping data production [21]. This perspective positions small data as both an analytical and reflexive means of questioning how knowledge is constructed and circulated. When carefully assembled, small datasets can illuminate complex interdependencies, such as those within ecological systems, that remain invisible to large-scale, aggregated models

[30, 32]. This orientation toward context and reflexivity resonates with the notion of *thick data*, which extends ethnographic traditions to emphasise the meaning, motivation, and affect underpinning data practices [34]. Grounded in Geertz's concept of thick description, *thick data* foregrounds interpretation as a central element in understanding human activity [12]. Building on this interpretive stance, data work can be understood as a continuous process of sense-making, through which records acquire significance within specific cultural and institutional settings [23]. Attention to the sensory and material dimensions of experience further enriches this understanding, situating data within the embodied and affective textures of everyday life [25]. The value of small data becomes more tangible in self-tracking practices, where metrics are interpreted and woven into everyday routines. These embodied engagements turn data into a medium for reflection on bodies, habits, and environments [18, 19], while discourses of optimisation, well-being, and self-care shape how individuals make sense of these records [29]. In this context, the act of tracking exposes the infrastructural assumptions and power relations that organise systems of measurement [23]. These practices blur the boundaries between quantitative and qualitative registers of knowing. Numerical indicators are frequently combined with notes, emotions, and contextual reflections, producing hybrid records that merge measurement with narrative [28]. The significance of small data thus lies not in the numbers themselves but in how they are situated, appropriated, and reinterpreted within everyday life. Beyond tracking, small data extends into personal archiving, where diaries, logs, and curated collections function as artefacts of both individual and collective memory, demonstrating that data's value resides in the social and cultural practices that sustain it [1]. Taken together, these perspectives point to an epistemology in which quantitative records and qualitative interpretation are intertwined. The value of data lies not in its scale but in its capacity to situate knowledge within lived experience. Whether through the immediacy of personal traces, the narrative depth of ethnographic accounts, or the careful curation of small datasets, small data approaches demonstrate how meaning emerges from context and interpretation. In the urban domain, this orientation towards small data converges with emerging efforts to recontextualise data practices, linking global analytical frameworks with the situated realities of everyday urban life [15]. Systematic reviews of big-data research emphasise the need to integrate spatial and social dimensions for addressing the complex interrelations that define contemporary cities [9]. Building on this trajectory, recent work in urban informatics demonstrates how technological and educational innovation can support more context-sensitive approaches to urban analysis and planning [17]. Yet, despite these developments, most research continues to operate at infrastructural and institutional scales, where data remains abstracted from the lived experiences and social relations through which it acquires meaning. What remains underdeveloped is a sustained understanding of how data practices might embed participatory and experiential dimensions – recognising citizens not only as data sources but as contributors to the production and interpretation of urban knowledge. Within this context, the project unfolds through the following research question: how might small data practices be mobilised to foster collective forms of knowledge-making and reconfigure the relationship between data, citizenship, and urban governance?

3 Connecting Small Data to Large-Scale Models Through Participatory Practices

Building on the question of how small data practices might re-configure the relationship between data, knowledge, and urban governance, participation emerges as a central dimension. While small data foregrounds proximity, experience, and reflexivity, participatory approaches offer the social and institutional conditions through which these qualities can operate at the urban scale. Integrating small data and participatory design thus provides a means of linking embodied experience to collective knowledge production and decision-making. Although small data has often been associated with self-tracking and individual reflection, its potential extends far beyond the personal. Scholars in critical data studies argue that small and big data are not opposing paradigms but complementary forms of knowledge: the fine-grained detail of small data gives meaning to large-scale models, while aggregated datasets situate local insights within broader systems of understanding [6, 24]. Even in technological and organisational domains, small data increasingly functions as an interpretive layer, an epistemic interface that renders large-scale information actionable and contextually meaningful [19]. In design research, this relational understanding translates into practices where data acts as a catalyst for dialogue rather than a tool for measurement. Designing partial, situated, and co-produced datasets becomes a shared site of inquiry [27]. The concept of Participatory Data Design captures processes in which stakeholders collectively determine what counts as data, how it is collected, and how it is interpreted [16]. Such approaches give rise to *data publics*: temporary arenas of deliberation and speculation in which data serves as a medium for shared meaning-making [8]. Within these spaces, collaboratively visualised small datasets foster cross-disciplinary interpretation, transforming information into material for collective discussion and critique [4]. Recent experiments in urban and spatial research have extended these ideas to collective contexts. Technology plays a central role in this evolution, not simply as a tool for data capture but as a mediating interface that shapes how data is produced, visualised, and interpreted [11]. Through digital platforms, mobile applications, and visual tools, data becomes both a record of lived experience and a prompt for dialogue between citizens, researchers, and institutions [7, 31]. The Urban Belonging project illustrates this orientation through a co-designed photovoice app that enabled participants to annotate places of belonging and exclusion, prioritising lived experience over fixed spatial categories and transforming personal images into collective narratives that informed planning debates [3, 20]. The Walking and Talking method expanded this logic by combining spatial movement with the collection of images, sounds, and tags, producing multimodal traces later revisited in group sessions where participants co-constructed their meaning and reframed them as shared cultural resources [26]. Despite these contributions, current research and practice still lack a clear articulation of how small data can be mobilised within participatory urban processes to inform decision-making and collective transformation. What remains underexplored is how small data can move beyond individual or experimental applications to become a structured means of participation that informs governance. Clarifying how and why small

data can be activated in participatory contexts is crucial to understanding its potential to link lived experience with processes of urban planning, policy, and design.

4 Integrating Small Data Into Participatory Urban Contexts: The Case Study of Lugano

This contribution advances the integration of small data into participatory urban governance by proposing a methodological framework. The framework illustrates how small data can support civic engagement and collective sensemaking across the stages of the urban process, from the generation of situated insights to their transformation into shared knowledge and action. The chapter first introduces the context from which the framework emerged, describing the participatory workshops conducted in Lugano, Switzerland, within the Bluecity project. It then presents the four methodological practices that define the proposed framework.

4.1 Waste as Situated Data

Two workshops enabled sustained engagement with local contexts and direct collaboration with the Municipality of Lugano. The aim was to examine how citizen participation and local data practices could foster new forms of communication and collaboration between residents and governance actors. This setting offered the opportunity to investigate small data through situated encounters with urban phenomena and everyday data practices, positioning participation as a mode of inquiry grounded in local experience. Urban waste management was identified as a particularly generative field through which to explore small data, because waste functions as infrastructure, routine, and cultural artefact simultaneously, making it an ideal lens for examining how data reveals the entanglement of material flows, social values, and behaviours in urban life. Scholars have shown how discarded matter exposes these interdependencies, from the “fatbergs” clogging London’s sewers as material ecologies of disposal [30], to Trash Track, which traced the global circulation of refuse through sensor-based mapping [22]. The first workshop, involving student groups, focused on prototyping data-scraping tools to document waste practices. The second, engaging citizens, expanded these prototypes into participatory activities such as mapping routines, co-designing indicators, and collectively interpreting visualisations. These encounters revealed how institutional datasets, while extensive, often overlook the tacit, embodied, and cultural dimensions of waste infrastructures. By foregrounding these situated forms of knowledge, small data became a shared medium for inquiry, enabling participants to challenge established categories and explore alternative ways of understanding and governing urban systems.

4.2 The Framework: Four Methodological Practices

The framework unfolds four methodological practices to operate within urban contexts by integrating small data and participatory design. The framework links embodied experience to collective knowledge production and decision-making, defining small data as locally generated, experientially grounded, and socially mediated information emerging from everyday practices of observation and engagement. This form of knowledge is produced in proximity to

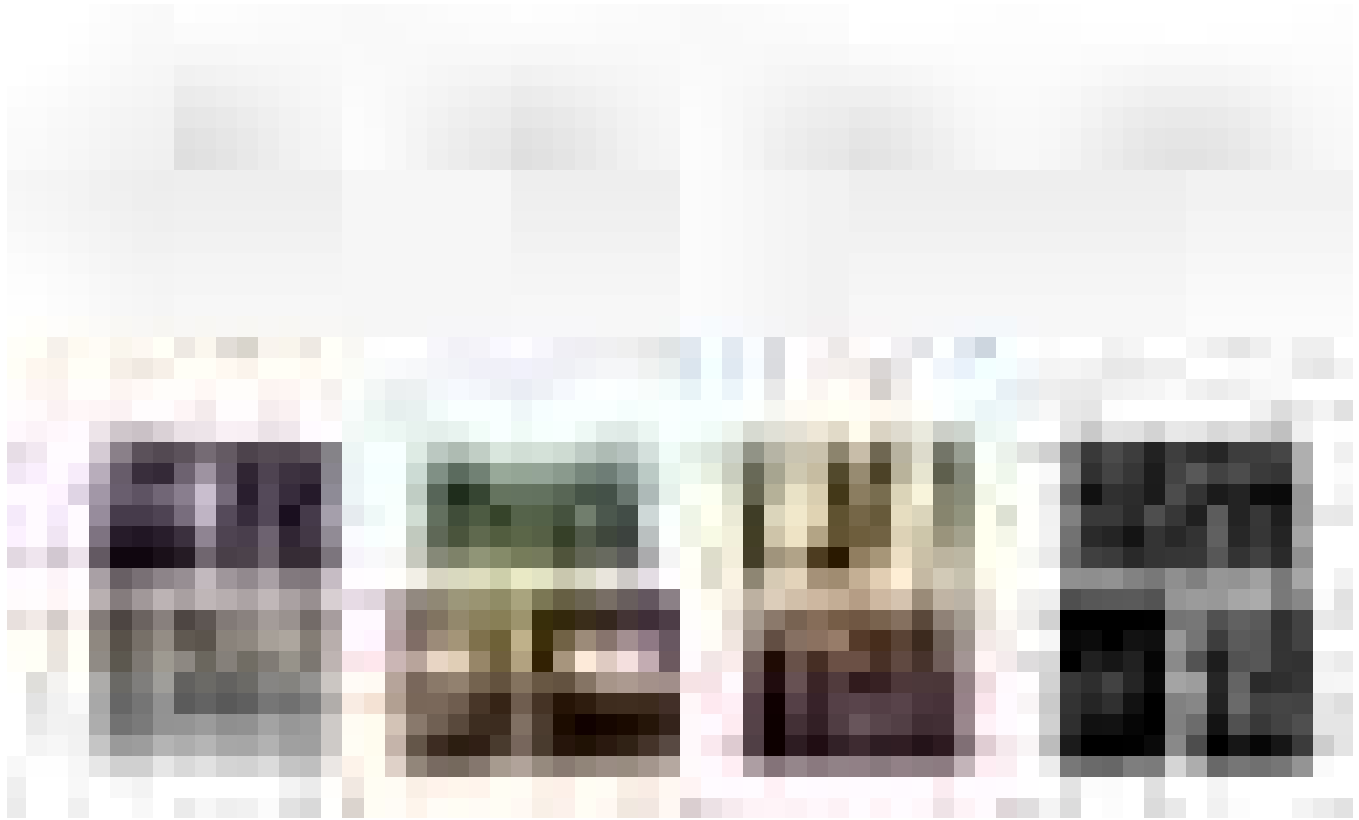


Figure 1: Visual representation of the iterative methodological framework showing the four interconnected practices – Seeing, Thinking, Sharing, and Sensing. The diagram organises the framework across three dimensions: methodological practices, what data emerged, and how participation unfolds.

lived experience, where meaning arises through interaction and situated reflection. In participatory settings, small data enables citizens to interpret their environments and contribute to shared processes of understanding and decision-making. Within urban governance, it complements large-scale analytical systems by providing the contextual depth needed to connect institutional models with lived realities, fostering inquiry rooted in situated understanding rather than abstraction. Grounded in participatory activities, the framework articulates four methodological practices – *seeing with, thinking through, sharing through, and sensing small data* – which describe how small data operates within participatory processes, specifying when it becomes active and what purposes it serves, Figure 1. Rather than forming a linear sequence, these practices constitute an interconnected system of inquiry linking data generation to interpretation, communication, and embodied engagement. Each one defines a distinct mode to engage citizens with small data to observe their surroundings, construct shared meaning, and contribute to collective reflection and action. *Seeing with small data* captures the capacity to access urban phenomena from situated perspectives, revealing the material, social, and environmental dynamics that are often overlooked by institutional forms of observation. Through practices of recording and capturing small data,

citizens engage with the city as active observers, generating traces that ground inquiry in lived contexts and make local issues visible. *Thinking through small data* articulates the interpretive function of small data, showing how, once organised and visualised, it becomes a basis for collective reflection and analysis. This process enables communities and public actors to connect individual experiences with broader urban patterns and to negotiate shared understandings of the city. *Sharing through small data* highlights its communicative and dialogical dimension, demonstrating how participatory mapping and co-design practices transform dispersed observations into shared artefacts. These artefacts foster dialogue, co-creation, and mutual learning among citizens, researchers, and institutions. *Sensing small data* emphasises its embodied and experienced dimension, showing how gestures, movements, and sensory engagements integrate data into the corporeal and material realities of urban life. Through this process, knowledge is reunited with lived experience, reinforcing the connection between participation, perception, and urban awareness. Taken together, the four practices position the framework as more than a single methodological device. It functions simultaneously as a means of data generation, a reflective tool, and a support for decision-making when small data enters institutional and governance context. Across the framework, data



Figure 2: Urban scraping prototypes developed during the first workshop. From left to right: DIY prototype displaying real-time thermal mapping; examples of algorithmic overlays for object detection and edge rendering; students showing the assembled hardware components of the prototype, integrating low-cost sensors and camera modules.

is not treated only as informational content, but as a material that mediates interaction between citizens and the urban environment.

4.3 Seeing with Small Data: Situated Access

How can the collection of small data enable more situated and participatory engagements with urban phenomena? The first methodological practice, *seeing with small data*, addresses this question by conceptualising observation and data collection as situated acts of inquiry, processes through which participants encounter and interpret the city from within its lived, material, and social conditions. In this perspective, seeing is not a passive act of documentation but an epistemic and participatory operation that entails attentiveness, relationality, and reflexivity. It invites citizens to observe the urban environment through alternative and more granular points of view, to recognise patterns and rhythms that are typically rendered invisible, and to engage with the infrastructures and behaviours that shape everyday urban life. The practice was elaborated through the two participatory workshops. The first, organised with multidisciplinary students at the SUPSI Campus in Mendrisio, focused on prototyping DIY sensing devices to enable citizen-led observation of waste practices. Preliminary discussions with municipal data officers had revealed the limits of existing datasets, which, while extensive, remained detached from the lived, sensory, and temporal dimensions of waste management, such as overflow conditions, accessibility constraints, or habitual routines. Students were therefore invited to address these data absences by designing experimental toolkits capable of capturing and representing forms of small data that could complement official records while enabling citizens to develop a closer and more situated access to the urban phenomena.

The resulting devices, built with low-cost sensors and cameras, were conceived as mediating artefacts rather than as neutral instruments of measurement. By converting environmental data into real-time visualisations, such as thermal mapping, edge rendering, or algorithmic overlays, the prototypes allowed participants to view waste as a dynamic and relational phenomenon, Figure 2. The second workshop, Urban Pixel, held in Lugano during the Lugano LongLake Festival, expanded this exploration by engaging citizens in collective data walks across different neighbourhoods. Equipped with the toolkits, participants collected small data using sensor-based imaging and visual documentation to record eco-points, circulation routes, and informal accumulation sites, Figure 3. The gathered data, which included temperature variations, spatial constraints, and overflow patterns, revealed fine-grained details of how waste infrastructures function within the rhythms of everyday urban life. The walks transformed data collection into an exploratory and relational process, enabling participants to observe aspects of the urban environment that conventional monitoring systems rarely capture. The toolkits revealed micro-level dynamics, such as localised inefficiencies, temporal fluctuations, and spatial asymmetries, that remain inaccessible through aggregated or large-scale data. The small data collected through this process offered a dual perspective. For citizens, it offered an opportunity to access and interpret the city's material and infrastructural realities from a local perspective. For institutional actors, it provided an alternative perspective through which to perceive the subtle dynamics that escape large-scale monitoring systems, offering new insights into urban complexity and responding to it.



Figure 3: Citizens using DIY sensing toolkits during the *Urban Pixel* workshop in Lugano.

4.4 Thinking through Small Data: Collective Interpretation

Thinking through small data proposes a methodological practice in which data becomes a medium for collective interpretation and critical reflection. It shifts the focus from collection to comprehension, exploring how small data can generate shared insights once they are revisited, visualised, and discussed with those who contributed to their production. In this perspective, data are not conceived as fixed representations but as evolving artefacts that acquire meaning through interpretation, dialogue, and their relation to lived experience. The data produced in the previous phase were visualised and discussed with citizens in a dedicated session during the workshop. They were invited to revisit the material previously collected and to reflect on how each dataset had been produced within specific spatial and temporal conditions. By examining the images together with their corresponding data structures, participants recalled the circumstances of collection, discussed why some results emerged, and related them to the context of their generation, Figure 4. These discussions focused on the urban sites explored during the collective walks, using the small data as a basis for dialogue and reflection. Participants revisited the places they had encountered, interpreting recorded traces through their own observations and experiences.

This process fostered collective imagination, inviting them to envision alternatives, speculate on improvements, and rethink how urban spaces might perform differently. By re-examining the information in context, thinking through small data, transformed the act of interpretation into a process of dialogue and contextualisation, linking sensor-based traces to lived experiences and generating situated understandings of the urban environment.

4.5 Sharing Through Small Data: Dialogue Co-creation

To extend the previous phase and transform individual experiences into a discussion where collective meaning could emerge, small data was collected through mapping practices that made everyday journeys to recycling points and bins visible. Individual maps were then assembled into a collective installation designed to be seen and discussed, fostering dialogue and reflection among participants on their daily habits. The mapping activity invited participants to reconstruct their own waste-disposal routines using Google Maps to trace their routes, which were then printed and annotated with materials such as coloured stickers, strings, pins, and handwritten notes. These tangible elements enabled participants to embed contextual information—such as household size, frequency and time of disposal, means of transport, and related daily activities—into



Figure 4: Interfaces used with citizens to analyse and review the data collected by the DIY sensing prototypes during the data walks. The visualisations combine images, sensor readings, and algorithmic renderings into multiple views that enable participants to explore, compare, and interpret the small data collected.

their maps, transforming abstract data into personal and situated narratives, Figure 5. Through this process, the maps evolved from descriptive records into reflective artefacts that captured both spatial and experiential dimensions of urban life. The material interaction encouraged participants to reinterpret their own actions, compare routines, and discuss the social and infrastructural factors shaping their practices. When assembled collectively, the maps revealed shared patterns and differences, providing a visual ground for identifying challenges and imagining improvements in accessibility, service design, and sustainability. By materialising lived experiences into visual artefacts, *sharing through small data* acted as a boundary practice that mediated dialogue, co-creation, and collective reflection. The process enabled participants to externalise and compare their experiences, fostering shared awareness and collaborative interpretation. Through these exchanges, small data became not only a record of individual practices but a catalyst for participatory learning and the co-production of situated urban knowledge.

4.6 Sensing Small Data: Embodied Experience

Building on the co-creative nature of the previous phase, *sensing small data* introduces an embodied perspective, extending participation from producing shared artefacts to engaging with lived experiences of the phenomenon itself. This practice considers the body as a site of perception and situated knowledge, showing how gesture and sensory interaction can reveal aspects of urban life that remain hidden to abstract or representational forms of data. The activity used a gesture-tracking installation in which participants were invited to perform the act of disposing of waste into a bin, Figure 6. The system recorded each gesture and its duration while projecting a real-time visualisation that responded to movements. This immediate feedback created a reciprocal relationship between action and perception, allowing participants to witness their gestures unfolding and to become aware of the physical and spatial negotiation within an everyday act rarely examined. The installation thus transformed ordinary behaviour into a moment of experiential reflection, revealing the interplay between body, material conditions, and infrastructural design. Participants then reviewed their recordings and annotated reflections on sensation,

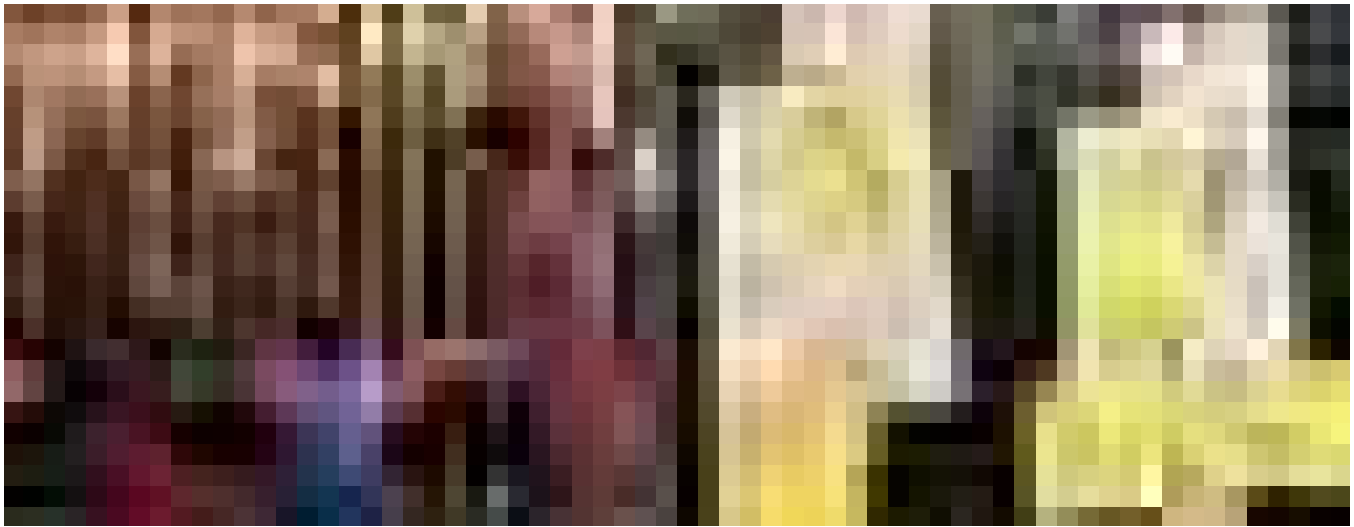


Figure 5: On the left, citizens engaging with the collective mapping installation, creating and discussing maps together; on the right, examples of annotated maps showing routes, disposal frequency, and contextual details used to visualise and compare everyday waste practices.

posture, and context, reconnecting recorded movement with lived conditions. These reflections exposed the corporeal and affective dimensions of waste practices, showing how bodily engagement shapes accessibility, effort, and adaptation in relation to urban systems. Sensing small data expands participatory inquiry to the sensory and embodied domains, transforming physical experience into a source of situated knowledge. And reinforcing the framework's co-creative scope through the interplay of collective meaning-making and individual-lived experience.

5 Conclusion and Preliminary Analysis of the Results

The four methodological practices developed in this study – *seeing with, thinking through, sharing through, and sensing small data* – illustrate how participatory approaches can reconnect data production with lived urban experience. Together, they form a framework that integrates observation, interpretation, communication, and embodiment into a unified process of participatory sense-making. Through these practices, small data becomes a medium for citizens to explore, understand, and reimagine their relationship with urban infrastructures and governance. Applying the framework to waste management in Lugano revealed its capacity to generate multiple layers of insight by grounding participation in situated perspective, bringing to light material, behavioural and cultural dynamics often absent from institutional datasets. This approach enabled citizens to engage with complex urban phenomena through their own lived experiences, lowering barriers to participation and allowing non-expert contributors to take part meaningfully in collective discussion. At the same time, it revealed a potential limitation, as experience-based engagement may narrow discussion to individual situations unless supported by mechanisms that encourage comparison and collective reflection. Finally, the process demonstrated

the epistemic value of participation itself, positioning citizens as interpreters, co-creators, and embodied participants in the collective understanding of the city rather than as passive data sources. A preliminary thematic analysis of the small dataset collected through this framework highlights the convergence of accessibility, spatial configuration, and everyday mobility in shaping waste-related practices. Participants' reflections revealed a number of interconnected issues, including the size and placement of collection bins, the limited availability of safe pedestrian crossings, and the absence of continuous walkable routes connecting residential areas to waste points. These observations revealed the direct influence of urban planning and micro-mobility conditions on citizens' ability to perform sustainable disposal practices. Other comments addressed the physical and ergonomic challenges of interacting with infrastructures, such as the weight and minimum capacity of municipal waste bags, which were often perceived as excessive for small households, to the difficulty of handling containers with narrow openings or unclear labelling. Participants also expressed a broader concern for the city's recycling culture, noting that infrastructure alone cannot ensure sustainability without greater civic awareness and shared responsibility. These findings demonstrate the diagnostic potential of small data in revealing how infrastructural design, spatial organisation, and everyday behaviour are entangled within urban systems. By enabling participants to generate, visualise, and interpret their own data, the framework turns local experiences into shared understanding. In this way, small data serve as mediators between individual perception and collective governance, fostering more context-sensitive and participatory forms of urban knowledge production.



Figure 6: Gesture-tracking installation exploring the embodied dimension of waste disposal. On the left, a participant performs the act of throwing waste while the system visualises the gesture in real time; on the right, the interface displays recorded movements used for reflection and discussion during the activity.

6 Limitations and Future Works

The project is still ongoing, and the results presented in this paper are therefore preliminary. In this context, the framework should be understood as an early, exploratory phase of participatory inquiry, intentionally oriented towards activating dialogue rather than producing immediate governance outcomes. Accordingly, success at this stage is assessed through the capacity of the activities to foster discussion and engagement with citizens. Early indications of impact are reflected in the interest shown by the Municipality of Lugano, which provided dedicated space for the activities and integrated them into a public city programme, as well as in the active participation observed during the workshops. As the workshops have only recently been completed, the collected material is currently under analysis, and the findings discussed here should be regarded as early insights rather than final outcomes. While the framework demonstrates how small data can support participatory urban inquiry, the limited number of participants and the short duration of the activities reduced the possibility of assessing long-term effects on governance or citizen practices. Future work should focus on extended collaborations to examine how small-data

practices can evolve and contribute to lasting institutional change. The next step involves presenting the results to the municipality, which played a role in identifying the initial problems and concerns discussed during the design of the activities. This stage aims to explore how the exchange can become more productive and how the findings can inform ongoing urban decision-making. Strengthening this relationship will be essential for embedding participatory data practices into policy design and governance processes. The role of municipal actors is expected to evolve from defining areas of inquiry to contributing to the interpretation and application of results, using small-data insights to improve public services and promote more responsive forms of governance. Further applications in areas such as mobility, energy, and public space could demonstrate the broader potential of small data to connect everyday experiences with systemic urban transformations.

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Raising the Next Gen-AI-Ration: Participatory Approaches to the Development of AI Ethics Literacy Education for Children in Europe

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Abstract

We present a two-stage participatory design process for developing AI ethics literacy activities for children aged 8-12. In Stage One, we collaborated with teachers, a child psychologist, an AI expert, and CCI researchers to explore how ethical principles could be contextualised and embedded within children's everyday encounters with AI. Results from these inter-disciplinary discussions informed the creation of scenario-based materials designed to foster critical reflection. Stage Two piloted these materials with children, examining how they engaged with different ethical concepts and identifying areas requiring additional scaffolding, particularly for abstract principles. Reflecting on this process, we discuss how participatory design functioned as both a methodological approach and as a reflective and transformative practice. Through our inter-generational approach, we demonstrate the value of collaboration in shaping meaningful AI ethics literacy interventions.

CCS Concepts

• **Social and professional topics** → **Children; Children; • Human-centered computing** → *Human computer interaction (HCI); Human computer interaction (HCI)*; • **Computing methodologies** → *Artificial intelligence; Artificial intelligence.*

Keywords

AI Literacy, Ethics Literacy, Children, Participatory Design, Co-Design

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1 Introduction

In many cases, the first time children encounter the ethics of Artificial Intelligence (AI) is after something has gone wrong. A video recommendation leads to unsettling content [30]; a chatbot gives an unexpectedly biased answer [5]; a child repeats something ‘*the robot said*’ as if it were gospel [33]. Teachers, parents and guardians are left to pick up the pieces, explaining complex technological systems in the heat of the moment. Such a reactive model of AI ethics is ill-suited to a world wherein algorithms quietly, yet increasingly, mediate children's everyday lives and decisions, often before they have the language to describe what is happening. Heeg and Avraamidou [18] demonstrated that children can develop partial, but fragmented, models of AI; demonstrating that children can recognise that platforms like YouTube, TikTok, and Netflix use their behaviour to recommend content, indicating an awareness of how algorithms can impact their experience based on personalised data. Yet, this understanding is often incomplete. Despite policy enthusiasm around digital citizenship and AI literacy, formal education often remains predominantly focused on coding and computational thinking, leaving issues such as transparency, sustainability, and responsibility comparatively underdeveloped [9].

Efforts to introduce AI ethics to children have taken many forms, with such initiatives being important steps towards making complex ideas accessible to younger audiences. Yet, most focus on a single ethical dimension; what remains under-explored is how these efforts might be woven together into a more multi-faceted, holistic approach. In this vein, participatory design offers an encouraging way forward [19, 21]. Rather than treating ethics as a set of rules to transmit, participatory approaches bring together the people who shape children's learning environments to consider, collectively, what ethical engagement with AI could look like [32]. In Child-Computer Interaction (CCI), Druin's seminal work demonstrates that children, when treated as design partners, generate metaphors, stories, and provocations that make abstract concepts tangible [13]. Further, participatory approaches have revealed gaps between how adults imagine children understand intelligent systems, and how children actually make sense of these concepts [10]. Crucially, these methods do not only include children. Teachers, psychologists, and domain experts bring developmental, pedagogical, and technical perspectives that are often missing when researchers work in disciplinary isolation [17]. Bringing such voices together through

participatory processes provides a richer, more nuanced foundation for designing how children will eventually encounter and critically reflect on AI ethics.

As such, this paper presents the results of a project in which we implemented a inter-generational participatory design process in an educational context to support the development of AI ethics literacy within young people. Working with teachers, a child psychologist, an AI expert, CCI researchers, and children, we examine how different experiences intersect and how this intersection can lay the groundwork for more holistic, meaningful engagement with AI ethics in children. Summarily, this paper reports the outcomes of a two-stages participatory design process and focuses on how the inter-generational team of stakeholders contributed to the development of the AI ethics literacy activities. The full details and findings of the pilot study (Stage Two) are reported elsewhere. In particular, this work is guided by the following research question:

RQ: How can inter-generational participatory design support the development of AI ethics literacy for children, and what does this process reveal about participatory design as an ethical practice?

This work contributes to the participatory design community by demonstrating how an inter-generational participatory approach can effectively inform the design of activities that foster ethics literacy in children. As such, we report the preliminary steps of a bigger project, as we aim to show how such inter-generational participation can meaningfully inform the design of activities to foster children’s ethics literacy, expanding the community’s understanding of participation as a shared, value-driven, and transformative process.

2 Related Works

Algorithmic bias in AI-powered educational tools is already shaping children’s learning outcomes in subtle, yet significant, ways [6]. Children, who may not yet have developed the critical reasoning skills necessary to detect and understand these biases, struggle to discern how algorithmic systems influence decisions, which can lead to misuse or misunderstanding [9]. This issue is intensified by an increasing reliance on AI-based technologies, which can foster over-dependence on algorithmic decision-making without corresponding awareness of the ethical implications involved [40]. These challenges, we note, are not only technical but include a developmental dimension. To understand why children may be especially vulnerable to these dynamics, developmental psychology offers useful frameworks. Piaget’s stages of cognitive development describe how children move from concrete operational thinking (roughly ages 7 to 11) to formal operational thinking during adolescence (beginning around age 12), as their capacity for abstract reasoning and hypothetical thinking increases [29]. Younger children are more comfortable reasoning about tangible, rule-based systems, but may struggle with abstract ethical concepts such as data privacy or systemic inequality [2]. Similarly, Kohlberg’s stages of moral development show that children in earlier stages focus more on immediate consequences, like rewards or functionality, rather than abstract, long-term ethical implications [23]. Despite these developmental factors, children are rarely meaningfully included in

discussions about the ethical aspects of AI. Although there is growing interest in involving children in AI-related decision-making, many organisations struggle to find effective ways to do so, leaving children largely absent from debates about the societal impacts of these systems [1]. This creates an unfortunate dual problem in procuring their involvement: children both lack the conceptual tools to critically interrogate AI, and are excluded from the spaces wherein such interrogation happens.

Educational initiatives represent one important response to this gap. In other domains, adapting complex concepts to children’s developmental capacities has been shown to be effective; for example, using simplified explanations of medical procedures can reduce anxiety and improve cooperation [16, 24]. A similar logic underpins recent work in AI literacy. Researchers in Child-Computer Interaction (CCI) have developed educational resources aimed at demystifying AI for younger audiences [8, 25–27, 35, 38]. The ‘AI4K12’¹ initiative, for example, introduces foundational AI concepts in accessible and engaging ways [36], and preliminary evidence suggests that such curricula foster both competence and positive attitudes toward AI [7]. Beyond technical literacy, early exposure to ethical reasoning is equally important. Spector argues that ethical decision-making skills should be ‘*introduced early and often*’ in a child’s development [34], and research on biowearables, for example, shows that age-appropriate discussions of ethical issues can increase children’s critical reflection in these areas [3]. These educational strategies are valuable in equipping children with knowledge and language to navigate AI-infused environments. They, however, largely position children as learners, not as active contributors to the ethical shaping of technology. In this vein, participatory design offers a complementary and arguably essential perspective. Embedding children’s perspectives in technology design is a longstanding principle in HCI [13], wherein participatory approaches treat children both as users and design partners who can articulate their values, needs, and concerns, particularly for technologies with ethical implications. Prior CCI research has shown that children, when given the opportunity, can express sophisticated ethical reasoning. For example, co-design studies have asked children to brainstorm ‘fair’ and ‘unfair’ scenarios with smart devices [4], express their hope and fears on smart devices [10], or to consider algorithmic recommendations [15]. Richards and Veinot [31] observed that children often critiqued manipulative or attention-grabbing technological features; when asked to propose alternatives, many suggested built-in constraints or break encouragements (e.g. usage limits, time feedback, gentle default cut-offs), suggesting an intuitive orientation towards technological wellbeing. Participatory approaches also benefit from allowing for inter-generational stakeholders (such as parents, teachers, and domain experts/researchers) to work in tandem, which enriches design outcomes. This aligns with value-led design principles, ensuring that ethical frameworks for AI reflect both children’s developmental abilities and broader societal values [20, 21] and increase their agency [19]. Such approaches suggest that fostering ethical engagement with AI requires more than teaching children about algorithms or ethics; it requires designing *with* them.

¹ai4k12.org

3 Methodology

We adopted a participatory, inter-generational design process to explore how ethical principles surrounding AI might be meaningfully adapted for an intervention aimed at improving AI ethics literacy of children aged between 8-12. Rather than beginning with pre-defined educational interventions, our aim was to understand how a range of diverse stakeholders conceptualised, prioritised, and negotiated different ethical themes and ideas. The study was conducted in two stages: firstly, we worked with adults to explore their perspectives, priorities, and approaches to co-design our intervention; secondly, we ran a pilot study with children to see how they received the initial findings and to gather their feedback on the intervention design. Below, we outline our participants, data collection methods, and analytical approaches.

3.0.1 Engaging Stakeholders. Ethical approval for the study was obtained from the Faculty Ethics Board prior to data collection. Adult participants and children's parents or guardians provided informed consent to take part in the study on a voluntary basis. All participants were informed about the purpose of the study, their rights to confidentiality, and their right to withdraw from the study at any point without any consequences. All names and identifying details were anonymised during transcription and analysis, and excerpts are attributed only by stakeholder group (e.g. 'teacher', 'child psychologist') in the findings.

3.1 Stage One: Adult Stakeholder Co-Design

3.1.1 Participants. Adult participants were recruited via purposive sampling to ensure that a diverse representation of disciplines, including education, psychology, and technical expertise, were consulted. Recruitment was facilitated via the authors' professional networks, academic mailing lists, and direct contacts with relevant academic and educational groups. Information on participants' field of expertise (self-defined), years of experience, current job description, experience with children, and geographical location were collected via a pre-interview questionnaire, and is available in Table 2.

3.1.2 Data Collection and Analysis. In Stage One, we collected data from experts via semi-structured interviews which were conducted online using video conferencing tools (either Zoom or Microsoft Teams depending on the participant's preference). Each interview lasted approximately 45-60 minutes and was audio-recorded with consent from the participants. The interview protocol included several open-ended questions designed to explore the following overarching concepts:

- Foundational knowledge and perspectives
- Challenges in making AI ethics accessible to children
- Plans, methodology, and next steps
- Future perspectives

We used the UNESCO principles for ethical AI (as outlined in their '*Recommendation on the Ethics of Artificial Intelligence*' [37]) as initial prompts for discussion around the varying dimensions of AI ethics to help develop shared definitions of differing ethical principles.

The audio recordings totalled approximately 6 hours and were transcribed verbatim by one researcher, and analysed using a directed qualitative content-analytical approach at the semantic (manifest) level [22], rather than a full thematic analysis due to the smaller, exploratory nature of the corpus. Ergo, we flagged any comments that explicitly referenced suggestions or reflections and coded it for appraisal content (e.g. methodologies, potential issues, etc.).

3.2 Stage Two: Pilot Study with Children

Following the analysis of the adult stakeholder interviews, we conducted a pilot study with children to explore how the themes and materials emerging from Stage One resonated with children. This stage was not designed, per se, as a formal evaluation of educational efficacy but as an exploratory step to gauge the clarity, relevance, and engagement of the initial outputs.

3.2.1 Participants. Children were aged between 10-11 and were recruited through two state schools involved in the university's outreach program. These schools share similar cultural and socio-economic contexts with UK public institutions and follow the UK national curriculum. In total, the group comprised 66 children. Sessions were conducted in small groups, using a set of prototypes co-designed during Stage One.

3.2.2 Data Collection and Analysis. Data from the pilot study were analysed using a directed content analysis approach, focusing on children's explicit comments and reflections on the activity during in-person group discussions of three to five participants (in groups pre-assigned by teachers). Each interview lasted approximately 30-45 minutes and was audio-recorded. Audio recordings totalled approximately 8.5 hours and were transcribed verbatim by one researcher. The insights gathered were used to refine and contextualise the outputs from Stage One. In this paper, we present the development of the participatory process and its key findings; the full details of the child-focused study outcomes are reported elsewhere.

3.3 Positionality Statement

As CCI researchers, we acknowledge the lack of neutrality that our role involves. We acted as facilitators of an inter-disciplinary and inter-generational participatory process, shaping the conversations through our choice of prompts and interpretive lenses. This positioning aligns with participatory design traditions in which researchers co-construct knowledge alongside stakeholders rather than extract it from them, though we wish to make this context known to the reader. Our background in participatory methods and AI literacy influenced the questions we asked and the themes we attended to during analysis. Again, we make this explicit to acknowledge how our own perspectives informed the process.

4 Results

We describe our results using our stage-based approach as a scaffold, wherein we list common observations from each group of stakeholders and the related outputs that inform our future study design.

4.1 Stage One

Adult stakeholders articulated perspectives that, whilst originating from different professional standpoints, repeatedly converged around two sustained recommendations to be considered in the design of our intervention:

Recommendation 1. AI Ethics Literacy Education Should be Contextualised. A common line of argument was that ethics could not be isolated from its context. Several stakeholders pushed back against the notion of a stand-alone ‘AI ethics unit’, describing such an approach as ‘artificial’ and ‘prone to abstraction’. Instead, it was advocated that embedding ethical concepts within realistic, child-friendly settings would provide a more grounded approach. Methodologically, speculative processes [14] (such as design fiction) were proposed, alongside specific considerations for incorporating a diverse range of ethical concepts and principles whilst limiting within-session load for the children. Regarding manifestations of AI for contextualisation, stakeholders repeatedly invoked the importance of including forms of AI that children encountered in everyday life (such as recommendation feeds, voice assistants, chatbots) as an ideal vehicle for contextualisation, with each inviting their own distinct ethical questions. It was also emphasised that these contextualised scenarios should be culturally relevant, using age-appropriate language, and (in our case) aligned with the UK national curriculum. Via situating these ethical issues within technological landscapes that children already inhabit, stakeholders argued, moral reasoning would become a habitual lens rather than an abstracted, theoretical exercise.

Recommendation 2. Deliberately Encourage Children to Critically Reflect. A second concept discussed within interviews was to encourage children to critically reflect on the ethical issues pertinent to AI. Stakeholders emphasised the need to equip children with habits of impromptu conceptualisation; the ability to interrogate emerging ethical issues with AI as they would encounter them, in real-time, precisely because the boundaries and capabilities of AI are consistently changing. In their view, ethical understanding must evolve alongside technological development by definition. Further, providing physical prompts, for example paper scenario strips, was a finding that also emerged through the inquiry sessions. Indeed, for children, handling a physical artefact could help bridge the gap between abstract concepts and concrete understanding. Tangible materials allow children to externalise their thinking, manipulate ideas in a visible form, and engage more actively with fictional or hypothetical situations. By physically interacting with scenario strips, children can more easily visualise ethical dilemmas, explore different perspectives, and articulate their reasoning in ways that are both accessible and meaningful. Stakeholders also provided suggestions on the types of questions that could be used to prompt children to reflect critically using these materials, fostering deeper discussion and ethical awareness. The series of questions we used to prompt the children was revised multiple times and eventually reviewed and approved by the teachers.

4.1.1 Insights Derived for Stage Two. The collective insights amongst our adult stakeholders were incorporated within the design of a pilot study, which would be tested within Stage Two. Firstly, we incorporated Recommendation 1 by creating a series of concise,

contextually grounded scenarios (in the vein of design fiction) spanning multiple AI manifestations and ethical principles relevant to AI (these materials are provided within Appendix A). Secondly, we incorporated Recommendation 2 by designing a structured discussion with children based on the questions suggested. Finally, the discussion with children was shaped in a way that prompted balanced reflection on the positives and negatives of the use of AI.

4.2 Stage Two

Stage Two piloted the generated materials with our child stakeholders. Our focus was specifically on understanding reception: what supported sense-making, where confusion arose, and which design elements merited revision before broader implementation.

Outcome 1. Children Describe Empowerment Through Self-Reflection. Many children reported attitudinal changes via working through the short scenarios and participating in structured group discussions. Several children described that the discussion had brought up ‘things that I hadn’t thought of’ and ‘gave [them] more ideas’. This shift from initial snap judgements towards a more considered position aligned closely with our aim of using dialogue as a scaffold for increasing children’s ability to reflect upon the content critically. Further, a recurring feature was a subtle but meaningful shift in perception. Post-intervention reflections frequently revealed that children’s views had evolved, sometimes towards greater caution (e.g. ‘[the AI wasn’t] as good as I thought’). These adjustments were often linked to an improved understanding of how design choices affect different stakeholders, or to realising that technologies could be adapted to mitigate harms. What emerged was a form of processual learning; movement from intuition to articulated judgement, facilitated by the structure of the discussions (e.g. ‘It just helps you decide the pros and cons of it. It made it better’).

Outcome 2. Certain Ethical Principles Require Greater Scaffolding. A further outcome, less immediately visible in surface dynamics but recurrent across groups, concerned the scope of children’s engagement. Some principles appeared to capture attention almost instinctively (e.g. privacy, fairness); being quickly raised and revisited. By contrast, more systemic or abstract ethical principles (e.g. transparency of decision-making, accountability/responsibility) were mentioned sporadically. These results point to the necessity of targeted scaffolding when introducing complex ethical constructs, particularly those that are less tangible or lack obvious, concrete analogies to children’s everyday experiences. Whilst children demonstrated emerging awareness of these concepts when prompted, spontaneous discussion of them was limited, thus suggesting that without deliberate instructional framing, key ethical principles risk being overlooked or under-explored, even in participatory and dialogic settings.

4.3 Limitations

This study represents an exploratory first step within a broader research programme and, as such, has limitations. Firstly, both stages involved a relatively small and demographically homogeneous sample (i.e. limited stakeholders for Stage 1, children only from two UK schools for Stage 2), which may limit the generalisability of findings to other cultural or disciplinary contexts. Secondly, the

pilot study focused primarily on exploring the reception of participatory materials rather than conducting a formal evaluation of learning outcomes. Finally, the participatory activities and analyses were shaped by the researchers' positionalities and methodological choices, which may have influenced both the framing of ethical issues and participants' responses.

5 Discussion

Our participatory design approach to AI ethics literacy for children yielded a layered set of contributions. Firstly, we co-created UK curriculum-aligned scenarios that spanned a diverse range of AI manifestations and ethical principles. Secondly, we developed a structured reflection approach (through guided group discussions), which children found both engaging and clarifying. Finally, we identified design implications regarding the need for careful scaffolding and iterative refinement of these materials as they scale. Drawing on the outcomes of our two-stage participatory process, we articulate how children's ethical sense-making was supported through participation, and how the inter-generational design process itself shaped power, voice, and responsibility within the research. In discussing our results, we return to our research question:

How can inter-generational participatory design support the development of AI ethics literacy for children, and what does this process reveal about participatory design as an ethical practice?

We believe it is a pertinent result to outline our reflections on our process of utilising participatory design and the outcomes garnered for our future work. In this regard, we found the interdisciplinary and inter-generational nature of the stakeholder group itself to be particularly valuable. Each disciplinary lens, along with our inter-generational insights, illuminated different design considerations specific to their areas of expertise. Teachers spoke of the everyday realities of classroom pacing, assessment, and curriculum alignment. The child psychologist emphasised developmental appropriateness and the scaffolding needed for ethical reasoning to take root at different ages. The AI developer considered points wherein technical precision mattered: clarifying, for example, common misconceptions about machine 'intelligence' and data use. Meanwhile, the Child-Computer Interaction (CCI) researchers foregrounded participation, reminding others to design not just *for* children but *with* them as design partners, preserving agency throughout the process. Children themselves demonstrated the efficacy of participatory framing not only in surfacing their unique insights within the area but also in reshaping the direction of the activity design itself. Their interpretations frequently challenged our assumptions as to what ethical engagement might look like at this age. In several cases, their contributions reframed how we considered concepts like fairness or agency, prompting revisions to both content and framing. This reinforces prior findings that children, when treated as competent co-designers, actively participate in shaping more inclusive, resonant pedagogical experiences.

5.1 Power, Voice, and Mediation in Inter-Generational Design

Inter-generational participatory design involves inherent power asymmetries, particularly where children engage with adult experts whose authority might stem from a plethora of factors such as age,

expertise, or institutional power. Participatory design and CCI literature cautions that, without deliberate mediation, such dynamics may risk positioning children purely as informants rather than as legitimate contributors to design and ethical inquiry [13, 21, 39].

Within our work, it must be acknowledged that power cannot be entirely removed, but can be actively managed and mitigated through the structure and facilitation of the participatory process [39]. Our adult stakeholders contributed disciplinary expertise during the initial design phase; however, children's engagements with the resulting materials were treated as authoritative in shaping revisions and identifying wherein ethical concepts required further scaffolding. We believe that this reflects approaches that frame participation as a negotiated partnership rather than an assumption of equality. Aterial mediation played a central role in redistributing authority. Scenario-based artefacts acted as shared objects of inquiry, allowing children to interrogate ethical dilemmas without necessarily deferring to adult expertise. Facilitators deliberately avoided correcting children's interpretations, enabling children's reasoning, rather than technical accuracy, to guide analysis and redesign, as aligned with research emphasising recognition, autonomy, and facilitation as key to supporting children's voice [11, 12, 28].

6 Conclusion and Future work

What emerged from our two-stage participatory process was both a collection of improved materials for AI ethics literacy education and a reflection upon the use of participatory design, itself. Participatory design acted simultaneously as method, mirror, and catalyst: a way of designing, a means of revealing hidden assumptions from differing stakeholders, and a mechanism for transformation. As such, the participatory ethos will remain central in subsequent phases. The next stage involves further classroom implementation, assessing both learning outcomes and facilitation dynamics, whilst maintaining the same iterative feedback loops between adult stakeholders and child stakeholders. A further ambition is to extend participatory design beyond the research team, hopefully with the aim of enabling educators to co-develop or adapt ethical AI curricula with their learners as required, embedding participatory approaches within everyday pedagogy. More fundamentally, we believe that the use participatory design in this context facilitated a form of ethical literacy education in which participation itself becomes an ethical practice. In such settings, ethics is not simply taught: it is performed.

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A Generated Design Fiction Scenarios

UNESCO Ethical Principle	Brief Definition	Scenario
1. Proportionality and Do No Harm (Articles 25-26)	Ensure the use of AI is necessary, context-appropriate, and harm-avoiding	Scenario 1. Your school is thinking about using an AI tool to help with different tasks around the school. For example, the headteacher was thinking of using the AI to decide which students get to have extra playtime based on their behaviour.
2. Safety and Security (Article 27)	Prevent and eliminate AI-related safety and security risks	Scenario 2. Your school is thinking about using an AI security system to protect the school from accidents. The AI can close windows if it's too windy, lock doors when everyone is in class, and send warnings if something dangerous happens, like a fire or broken equipment.
3. Fairness and Non-Discrimination (Articles 28-30)	Ensure AI benefits all, avoiding discrimination and promoting fairness	Scenario 3. Your school is thinking about using a new AI system in the cafeteria that helps students decide which of the food choices (red, yellow, green) to eat. The AI tracks what you eat every day and gives suggestions based on who you are and what you usually eat.
4. Sustainability (Article 31)	AI should align with sustainable development goals across all dimensions	Scenario 4. Your school is thinking about using a new AI tool to help protect the nearby woods and wildlife by spotting signs of damage or pollution early, but it needs a lot of clean water to keep its computers cool so it can keep working.
5. Right to Privacy and Data Protection (Articles 32-34)	Respect and protect privacy throughout AI's data life-cycle	Scenario 5. Your school is thinking about using an AI that tracks how much time you spend online and what you do. It collects this information to help your teachers understand how you learn so it can help more in class and keep you safe.
6. Human Oversight and Termination (Articles 35-36)	Ensure humans retain ultimate control over AI, especially in critical decisions	Scenario 6. Your school is thinking about using an AI tool to help your teachers give you feedback on your homework faster. It scans your homework and quickly gives tips and feedback based on how you have done.
7. Transparency and Explainability (Articles 37-41)	AI systems must be understandable, traceable, and contextually transparent	Scenario 7. Your school is thinking about using an AI to decide who gets chosen for Star of The Week. The AI looks at your grades, behaviour, and some other factors to make the decision.
8. Responsibility and Accountability (Articles 42-43)	Ethical and legal responsibility for AI lies with its creators and users	Scenario 8. Your school is thinking about using an AI tool that helps to track who has or hasn't returned their library books to save the librarian time, but sometimes it says someone didn't return a book even when they did.
9. Awareness and Literacy (Articles 44-45)	Promote public understanding and informed decisions regarding AI technologies	Scenario 9. Your social media uses AI to decide which posts and ads to show first, based on what it thinks you will like, but it doesn't mention that it uses AI to make these decisions.
10. Multi-Stakeholder and Adaptive Governance and Collaboration (Articles 46-47)	Include diverse stakeholders in AI governance for shared benefits	Scenario 10. Your headteacher is thinking about using an AI to help shape school rules and activities.

Table 1: Scenarios utilised, as per their association with the ethical principles for AI as defined in the UNESCO ‘Recommendation on the Ethics of Artificial Intelligence’ [37].

B Adult Stakeholder Demographic Table

Field (Self-defined)	Experience (Years)	Job Description	Experience w/ Children	Location
CCI	20+	Researcher	Yes	Europe
CCI/AI Ethics	0-5	Researcher	Yes	Europe
Education	20+	Teacher	Yes	Europe
Education	20+	Teacher	Yes	Europe
Education	20+	Teacher	Yes	Europe
Machine Learning	6-10	Researcher	Yes	Europe
Psychology	0-5	Researcher	Yes	Europe

Table 2: Adult stakeholder demographic information as garnered from our pre-interview questionnaire. CCI = Child-Computer Interaction.

Creating a Library Environment for Teenagers in Denmark: Exploration in Participatory Design Methods

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Abstract

Participatory design is centered on increasing its reliance on participants to shape solutions. Because of this inclusion, unique research practices must be created to respond to specific contexts and parameters. This study explores how workshop creation and engagement as participatory design methods can help tangibly reflect the needs and interests of teenagers in library environments, ultimately leading to both product and interior design proposals for the purpose of this case study. In interacting with these workshops, citizens and designers assisted in the evolution of a novel **design sequence** that links products, spaces and values during the participatory design **process**, which has the potential for further expansion and application. This **project demonstrates** the potential to **eventually** address **other** complex environments with various artefacts and citizens, co-developing meaningful designs that foster positive connections grounded in participatory practice.

CCS Concepts

• Participatory Design;

Keywords

design method, workshop design, library design, co-design, design methodology, case study

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1 Introduction

Participatory design methods are used to develop problems and solutions alongside users and environments, allowing those affected to be at the heart of decisions related to the ultimate designed solution or proposal. Participatory design was developed from early recognition of the user in the design process. Design researchers like Cross (1971) [8](Cross et al., 1981) [9], and Lawson (2006) [17] mentioned the importance of integrated participants in design

methodologies several decades ago, leading to current methods and awareness today, illustrated by the work of Luck (2018) [18], Simonsen and Robertson (2013) [21], and Bratteteig, et al. (2013) [7]. Methods and practices of participatory design have been used in a number of both digital and physical fields (Teal and French, 2016) [24] and scales, ranging from healthcare (Till, et al., 2022) [26](Akoglu and Dankl, 2019) [1] and architecture (Dalsgaard, 2012) [10], to policy (Binder, et al., 2015) [3] and equality (Hussain, 2010) [12]. At the expense of this endeavor, designers forfeit some control of the outcome, particularly on a larger scale. In turn, participants in the design process now feel inherently connected with the process and outcome, similar to how a craftsperson can feel about their own work (Teal and French, 2016) [24]. A connection can be formed between more parties through democratizing design (Björgvinsson, et al., 2010) [4], creating a smoother transition into actual adoption or adaptation of a solution moving forward.

This case study aimed at improving one sub-environment of a municipal Danish library, which adopted this methodology for implementation because of its interest in maintaining a current system and community, while proposing a molecular change that could feasibly be implemented and communicated (Koskinen and Hush, 2016) [16](IDEO, 2014) [13]. The purpose of this paper is to analyze and assess the outcomes of this social design project (Markussen, 2017) [19], as well as the more refined steps, methods, and eventual process outline that developed because of this project. Three workshops were designed and conducted, as well as several intermediary participatory processes that will be touched on throughout (Brandt, et al., 2012) [6]. Participatory design is a vast and expanding field, and it is important to explore its tangible impacts relevant to its intention (Brandt, 2006) [5].

In addition to a background in participatory design, noting some significant patterns in designing for teenagers also proved beneficial in understanding the process and outcome. One notable factor is the stage of development teenagers are in. Teenagers are faced with a myriad of changes, decisions, and circumstances over a very short period of time, so making any sort of interaction clear and relevant was very important for our study (Iversen, et al., 2013) [14]. Similarly, teenagers' values are different than any other participant in this design system, so being able to acknowledge that throughout the process also proved important (Bowen, et al., 2013) [2]. These insights are reflected through the process, workshops, and final design proposals.

Lastly, the library also contributed to this collaboration in response to little involvement from teenagers in the area. Most teenagers reportedly get educational material from sources other than the library (online, school libraries, etc.), making the existence

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Figure 1: Simplified diagram from Sanders, E.B.-N., Stappers, P.J., 2013. Convivial Toolbox [20].

of the library obsolete for some. To better understand teenagers and provide some possible directions for this library, we organized and recorded this study. Similar processes have been undergone in other parts of Denmark, as well as other locations around the world (IDEO, 2014) [13]. What is shared here is an additional example in the field of participatory design, as well as some unique practices and perspectives that can also become associated with the evolving participatory design method and mission (Smith, et al., 2017) [22].

2 Method

Underneath the broad umbrella of participatory design, several concrete methods were used to gather and digest information throughout the design process (Simonsen and Robertson, 2013) [21](Sanders and Stappers, 2013) [20]. Three workshops were facilitated at a variety of locations relevant to the library's interests, as well as with a number of students within the relevant population. This section will go into detail about each of the three workshops, as well as the complete procedure for assessing the data.

The overarching theory behind the workshops derives from the work of Sanders and Stappers, which identifies the relationship between what participants say, do, and feel, the related knowledge, and the methods for retrieving that knowledge (Figure 1). As we progressed the study, we used these different methods of gathering knowledge and interacting with participants to build on each other, hopefully leading to a holistic outcome that also revealed insights into how the intangible and tangible reflect each other through the design process.

2.1 Workshop 1

To understand the needs and values of teenagers in the area, a drawing exercise was developed to give teenagers complete freedom and ambiguity within the context. Because we were dealing with a physical space, the floor plan of the library was used as an outline for teenagers to fill, responding to the invitation to "Draw your perfect culture house!" The phrase 'culture house' was used to help participants look beyond the typical library. Except for this prompt, little to no information was given to teenagers about what they should do, draw, or prioritize during the exercise.



Figure 2: Response from Workshop 1

The exercise was given to 13 13–18-year-olds at a local library from a nearby town, as well as 6 teenagers at a club close to the library. Students were given a drawing utensil to complete the task, but no time limit. Some students finished the task in 3 minutes, while others took 15–20 minutes. You can see some examples of filled responses below (Fig. 2, Fig. 3).

On an additional note, this exercise was developed after some basic internal testing with 2 university students, leading to the simple and open version that was used as Workshop 1. Results from this workshop will be discussed in the Results section.

2.2 Assessment 1

Elements from the drawings were dissected and assessed in order of frequency, with fascinating outliers also included. Practical items were often included, such as chairs, tables, check out stations, computers, and couches. However, there were also notable outliers, such as a soccer pitches, cafes, dance halls, and gaming rooms. The most frequently mentioned elements from Workshop 1 informed Workshop 2, creating 6 space genres or functions to work from.



Figure 3: Response from Workshop 1

2.3 Workshop 2

Responding to the information gathered in the first workshop, a second workshop was developed to further develop spaces that teenagers found valuable, pulling away from the abstract towards solutions that could be implemented. This workshop's purpose was to have teenagers create physical models of rooms based on the mood board given to them (tied to results from Workshop 1). Twenty 14-15-year-old students from a local school helped carry out the workshop over 90 minutes.

Teams of 3-4 students were given a sturdy black board approximately 30 cm x 70 cm and asked to use the board as a base to model a room they would like to have in their library that fit the mood provided. Materials included foam blocks, cut in a variety of shapes and sizes, as well as markers, tape, fabric samples, cardboard, plastic blocks, plastic tubes, cotton, mesh and other scrap materials (Figure 4). Students were also asked to name their rooms and give a brief presentation to the class that responded to 8 provoking questions including, 'Why do you go here?', 'With whom do you come here?' and 'What objects do you need in this space?'

Once the students had been given time to build their rooms, starting with furniture and function, followed by aesthetics and material, they were invited to present their rooms to the class as groups. Students were encouraged to ask questions about each other's work, leading to brief conversations about the spaces that were created and why they were the way they were.

After the workshop concluded, photos of each space were taken (Fig. 5, Fig. 6, Fig. 7), as well as notes from the conversations and presentations that were part of our time with the students.

2.4 Assessment 2

Assessment for this workshop followed what we called a "What, Why, Intention" chart, which we developed for the purpose of understanding the results of Workshop 2. The chart can be seen in Figure 8.

This method of understanding uses objects to reflect meaning and values, connecting the concrete and the abstract from the workshop. Because design is often concerned with effects of the material, this arrangement was constructed to help bridge the objects proposed,



Figure 4: Materials used for Workshop 2

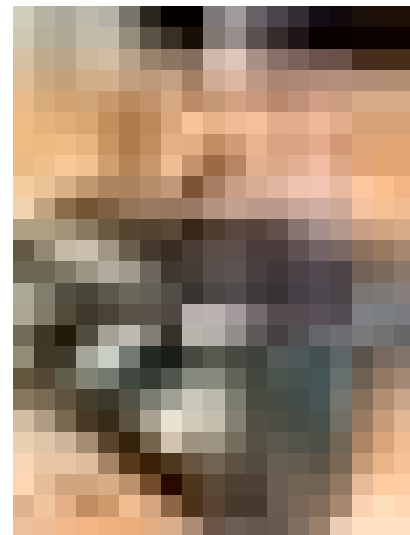


Figure 5: Room model from Workshop 2

their general functions, and then why those functions might be desirable in the context. We took the objects and characteristics of each space and grouped them by these intentions or functions. After that, each intention was given a statement that was the 'why' justifying each intention, which was based on the data collected, conversations from the workshop, and collaborative analysis and consensus from the research team. This final section of the method helped us understand the values behind not only the characteristics teenagers preferred, but also the intentions they gravitated towards. This assessment led to findings that inspired Workshop 3.

2.5 Workshop 3

After progression within the research group, discussions with library staff, and further convergence between a number of reconstructed 'How might we' statements, we came to a concluding design question that set up our final participatory inquiries. The



Figure 6: Room model from Workshop 2



Figure 7: Room model from Workshop 2

revised statement was, ‘How might we make the book browsing experience more approachable for teens through inspiration from recognizable environments?’ The final workshop was designed to narrow this down to a specific recognizable environment.

The final workshop was conducted in a different local school from Workshop 2, with 30 14-16-year-olds from both Danish and international backgrounds. Students were put in groups of 3-4 students and asked to complete an identical task. The task was to take a packet of cutout objects, each from 4 different recognizable environments (canteen, grocery store, clothing store), and pick 10 that they would like to see books displayed in. Afterward, they drew the books how they wanted on those cutouts and placed them on cardboard stands to set up on 30cm x 40 cm boards, similar to those in Workshop 2. They were asked to arrange their displays in a way that would be inviting to them in a library setting.

Students concluded the 120-minute workshop by presenting their spaces to the class, providing basic justification for why they selected what they did, and why they designed their space in such a way. Notes were recorded, as well as photos as seen in Figures 9, 10 and 11

2.6 Workshop 3

The final workshop assessment was straightforward. We gathered and counted all workshop items and discovered that grocery store items were most frequently used by the students in their book displays, which instructed further ideation and testing for our final proposal to the library.

3 Results

Each of the workshops yielded results of different types. There were results in response to the participatory design methods, as well as results that pertained to the project inquiries themselves. Additionally, the proposal that resulted from this project functions as a result of this participatory process and the workshops it was comprised of.

3.1 Participatory Method Results

3.1.1 Workshop 1: Draw Your Culturehouse. The method for Workshop 1 yielded positive responses and interactions. After a conversation with participants, it seemed like a great exercise for evaluating general interests and values but was otherwise too broad and ambiguous for the demographic. Similarly, a time limit and some specific questions could have helped standardize responses. With regards to Sanders and Stappers (2013) [20], the exercise could have been enhanced through more dialogue throughout to help supplement the making aspect. Overall, results from this method enhanced a divergent section of the design process but could certainly be refined to extrapolate on more particular categories for the new space (activities, objects, resources, etc.).

3.1.2 Workshop 2: Build Your Library Space. The space creation exercise was better defined and more tactile than Workshop 1 but was perhaps still too ambiguous for some participants. One difficult, yet positive aspect of this activity was the group element, which made decision-making and group development in an open activity even more complex. However, group work also yielded a need for justification when an element was placed, or a color was chosen, which helped answer our inquiries as designers and facilitators. Through observing student interaction and creation we could learn about why students wanted a lounge versus a basketball court, or perhaps a book stand versus a bookshelf. Additionally, having students articulate their decisions to the class afterward helped elevate our understanding further, even though it required a simplification of some of their thoughts and designs. Students were much more willing to share their thoughts while building, rather than in front of their peers at the end. Lastly, this workshop was a great lesson in the benefits of tactility. Giving teenagers objects, abstract or not, allowed them to instigate conversation and rationalize more easily. Building kept their hands and minds busy, and the task was exciting for many of them.



Figure 8: What, why, intention chart from Assessment 2

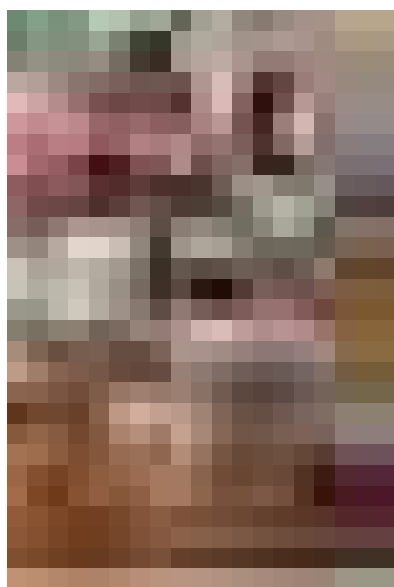


Figure 9: Book display and space models from Workshop 3

3.1.3 Workshop 3: Design Your Book Displays. Lastly, the third workshop was direct and simple for the students, allowing them to give us very clear answers to very clear questions. The task was marked out well for the teenagers, and they were given plenty of time to work together and develop something they liked and understood. Additionally, students appreciated having more involvement from their supervisors and instructors, as they were more comfortable with their counsel and questions. Using existing relationships to help learn from teenagers became a valuable part of this final workshop, and something we wish had been more apparent in previous inquiries. In the presentations from the students, we observed once more an apparent simplification of their work, but with some



Figure 10: Book display and space models from Workshop 3

follow-up questions we were able to once again better gather what we were there to learn. For instance, many could not explain why they selected grocery displays for books, but after some probing it was evident that they were comfortable with those display artifacts and could see themselves spending time around them, as opposed to those of a store or canteen.

3.2 Project Results

3.2.1 Workshop 1. 6 distinct areas were defined after categorizing the results we received from the first workshop. Those areas included cafe, lounge, study, creative, entertainment, and interactive, with each derived from specific drawing elements. Overall, 19



Figure 11: Book display and space models from Workshop 3

drawings were collected, with a variety in detail and concept. Additionally, there were notable outliers from the drawings, including football pitches, gyms and no-kid zones.

3.2.2 Workshop 2. Similar to workshop 1, the assessment led to 5 intentions or functions that were dictated by the objects and narratives the teenagers created. Those 5 intentions included eating, studying, relaxing, gathering, and having fun. An additional note, which led to our next steps, was that most of the spaces included multiple intentions or purposes. It was clear that lots of teenagers prefer a malleable space, designed for more than one function. They like to be able to switch between activities at the drop of a hat, which we found fascinating. For example, most areas, regardless of the mood board or primary function, included places for lounging and relaxation.

3.2.3 Workshop 3. The final workshop revealed a dense amount of information that directed our final proposal for the project. We received 60 drawn book displays over 4 categories. As mentioned previously, there was a preference towards grocery items, with approximately 50% of the 60 drawn items being from that category rather than the other 3. Interesting display trends included the grouping of books in small batches, presenting books with the cover face forward, and contrasting display methods in the same display. An overall conclusion from the teenagers was that having books displayed in less common formats than the traditional bookshelf made browsing more interesting and engaging. We took their comments and outcomes and moved forward with them into the final phase of design.

3.3 Project Results

Several rounds of design iteration permeated the time that spanned the 3 workshops. There was iteration on flexible or malleable areas, as well as library-grocery items, and finally book browsing displays for teenagers. Additionally, a number of small-scale prototypes were made as an exploration of different features for the final product. The final proposal made to the library was a grocery interaction-inspired teenage area, with book browsing features common to local grocery stores, such as fridge-like bookshelves, reading freezers, hanging books, and a center display for exploring certain literature. We prototyped the center display, which can be seen in Figure 13, alongside Figure 12. The different elements of the display each reflect insights gained from the teenagers over time, as well as the needs of the librarians. The proposal itself was presented and appreciated by the library and the teenagers who participated.

4 Discussion

4.1 Values, Spaces and Objects

The relationships between the sought-after values of each workshop became of interest over the course of the project. Workshops were designed to answer specific questions central to a specific part of the design process. Retrospectively, these interests align well with three gradually narrowing elements that could be helpful in future studies. The three elements are values, spaces/experiences, and objects (Figure 14). Workshop 1 helped define values and priorities that were validated in Workshop 2, which simultaneously took those values and translated them into reality through spaces and experiences that students expounded upon. The final workshop focused on a representative object, as well as a final concept that could be transformed into a complete proposal. The progression of workshops guided a natural movement from the problem context to the final outcome.

What is also interesting is that the workshop model can also be shown inversely, as a prior section to the process. Understanding a problem and defining it can perhaps be evaluated through the opposite direction of steps, working from object towards values. To learn about what values people initially held at the library, and area to focus on, we experienced physical elements and spaces, then expanded until we saw what values and needs were lacking. After that, we condensed once more through workshops. A perspective like this may be beneficial for future participatory design development and practice.

4.2 Future Workshops

The workshops were generally successful in retrieving data and insights, but future workshops could be improved in a number of areas. Firstly, future workshops should do a better job of utilizing existing resources and relationships surrounding the participant group. If they are students, talk to teachers and seek guidance before moving forward; if they are senior citizens, talk to their families and caretakers to best know how to interact; if they are professional chefs, try talking to their coworkers and customers to learn as much before conducting any planned activity. Secondly, there are significant benefits from maintaining a participatory group throughout



Figure 12: Final digital proposal for the teenage library area

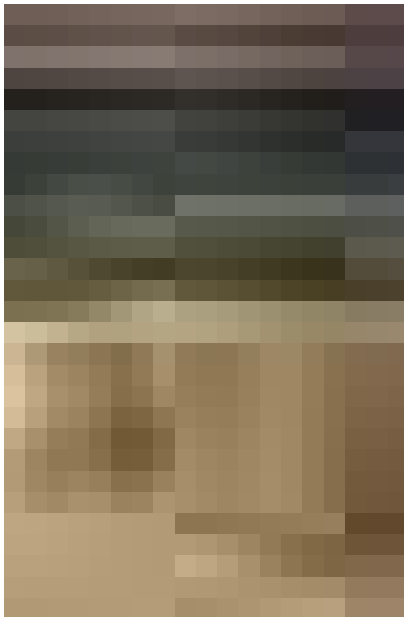


Figure 13: Final physical proposals for the teenage library area

the process, depending on the context. In subsequent studies one group of participants should be a part of each step of the design process, as well as additional populations if needed (Smith and Iversen, 2018) [23]. Encouraging a consistent level of interaction with the same participants can likely improve relationships, engagement and insights if in the appropriate circumstances. Lastly, increasing participant numbers can always improve a study, so that will of course take part in any progression related to this work.

4.3 Beyond Workshops and this Study

Practicing participatory design can take many other forms. Including additional forms of participation such as extended interviews, design probes, surveys and field trips could allow the participants to provide a different array of insights for the project (Knutz, et al.,

2018) [15]. Workshops are great for gathering collective answers to questions in a social setting, while providing meaningful experiences, but mixing up the method more within the process could create a more comprehensive collection of responses. The workshops from this project were certainly effective, but supplementing this practice with others may be helpful looking forward.

Additionally, participatory design is heavily dependent on what populations are accessible. For instance, although it might have been ideal to maintain a single group as participants throughout the study, we were encouraged to use the various populations that were available to us because of the ultimate desired representation of all teenagers in the area. Scientifically, this is challenging because it makes it difficult to develop relationships, monitor influence, maintain ethical considerations, and improve workshops; however, this diversity correlated with a variety of responses, opinions, backgrounds, and preferences, which we believe led to more unique concepts and greatly benefited the design endeavor of the study. The opportunity to work with minors also provided unique insight into the alternative experiences of participatory design, and how minors, especially teenagers, require certain levels of engagement and interpretation to become the best co-designers they can be. Workshop elements like time, materials, instructions, presentations, and critiques require thoughtful planning for these populations, which may also be why engaging them is often fruitful. Because the audience requires great care to engage with, the study benefits in turn.

4.4 Participatory Design Contexts

Finally, general participatory design methods do not work for all inquiries and contexts. Additionally, not all populations respond well to these methods, which should be addressed in future projects similar to this one. One major group that frequents the library is introverted individuals, or those not prone to social activities, so taking that into account when gathering information or creating relationships should be acknowledged.

5 Conclusion

The participatory design method used for this project and its related exercises assisted in developing solutions that were aligned with



Figure 14: Design process model using steps as illustrated in the workshops

the needs of a complex system of people, spaces and intentions. Workshops allowed us to understand the relationships teenagers wanted to have with the library and its offerings and including them in the design process encouraged more representative and inclusive findings in the end. Additionally, the flexibility of these methods guided an outcome that suited the librarians and their desires as facilitators of the public space. Improvements in research populations and testing could be made in future progressions of this structure, but the sample and method for this study suited its exploratory and local natures. Lastly, a distinct perspective for addressing values, spaces, and objects relationally throughout the participatory process resulted from the study and will be further tested and developed in later studies.

The participatory design process is meandering and messy. However, these workshops allowed a difficult problem within a complicated system to be addressed alongside the perspectives of the community and context. The values and insights for those benefitting from the design were embedded throughout, leading to meaningful design proposals as well as participatory knowledge and experiences.

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Feminist Participatory Approaches for Equitable Socio-spatial Futures

Mapping Experiences of Teenage Girls in Urban Public Spaces

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Abstract

Access to urban public spaces is often marked by socio-spatial exclusions, particularly for underrepresented groups such as teenage girls that also impacts their physical and mental well-being. It is crucial to have the perspective and active participation of teenage girls in the socio-spatial environment for fostering inclusive and equitable cities. Based on a community engagement project this paper presents insights on the methodological approach adopted to engage with teenage girls on issues related to access to public spaces. Creative feminist methods like zine-making and collaborative storytelling enabled participants to critically reflect on barriers and express aspirations. The paper highlights how participatory design approaches to community engagement can enhance participation and include voices of underrepresented groups on sensitive issues like access and safety leading to long-term social and urban transformations.

CCS Concepts

• **Applied computing** → Law, social and behavioral sciences; Law, social and behavioral sciences; Anthropology; Arts and humanities;

Keywords

Socio-spatial integration, Participation and empowerment, Design for periphery, Participation to policy, Design research tools

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1 Introduction

Urban public spaces like streets, squares, parks, transit stations, and other public environments constitute vital infrastructures of civic life. They are the material and symbolic grounds through which social relations are enacted, cultural identities are shaped, and political claims are made. Yet, despite the democratic promise of accessibility, these spaces are rarely experienced equally. They are sites of

stratification where gender, race, age, class, and ability intersect to produce uneven conditions of belonging and exclusion [1–4]. For teenage girls in particular, urban public spaces are often perceived as unwelcoming or unsafe, and their limited access has direct consequences for physical mobility, mental health, and long-term civic participation [5, 6]. Moreover, the absence of their perspectives in shaping of these environments reproduces structural inequities and perpetuates urban design paradigms that privilege dominant groups. This paper responds to this issue by advancing methodological reflections on a community engagement project conducted with teenage girls in the London Borough of Wandsworth from March - June 2025. The study sought to illuminate the socio-spatial barriers encountered by girls in everyday situations and to create spaces for expression and sharing for imagining more equitable futures. Central to its approach was the use of zine-making, a do-it-yourself publishing practice rooted in countercultural traditions of self-expression, activism, and feminist resistance [7, 8] as a participatory design tool.

This paper has two main objectives. First, it situates teenage girls' exclusion from public spaces within broader scholarship on gendered urbanism, highlighting why their participation is necessary for inclusive and equitable city-making. Second, using a feminist perspective, it presents a methodological account of the study, to highlight its role enhanced community engagement. Following the introduction, drawing from feminist urban studies and participatory design scholarship, section 2 provides a literature review on the importance of participation and inclusion of underrepresented groups, such as teenage girls, for the design of accessible and equitable public spaces. Section 3 elaborates the methodology, explaining the workshop design and theoretical underpinnings of zine-making as praxis. Section 4 reflects on the findings of the study highlighting the role of zine making, collaborative mapping and storytelling. Section 5 engages in a critical discussion that brings together participatory design and the politics of knowledge production, reflecting on the transformative potential of zine-making for activating agency and empowerment. The conclusion synthesizes these insights for emerging participatory design research and practice.

2 Gender and Participation in Urban Public Spaces

The literature on urban public space has consistently demonstrated that access is not neutral but deeply structured by power. As scholars [2, 9] argue, public space is always contested terrain, shaped



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by exclusions along lines of race, class, and gender. However, teenage girls occupy a particularly complex social position. The in-betweenness situates them at the periphery of both childhood and adulthood, often leaving them overlooked by urban planners, policymakers, and even researchers [10]. This marginality is compounded by gendered spatial norms. Research shows that adolescent girls are less visible in public spaces compared to their male peers, often confined to domestic or institutional settings such as schools and homes [11, 12]. This absence emerges from intersecting barriers, including fear of harassment, parental restrictions, and urban infrastructures that do not accommodate their social practices [13]. At the same time, adolescence is a critical period for identity formation and social belonging. Exclusion from public spaces during this stage limits opportunities for independence, friendship, and embodied interaction with the urban environment [14]. By engaging teenage girls as participants and co-creators in the design process, the research challenges dominant narratives that frame girls as passive or vulnerable users of space. Instead, it positions them as active knowledge producers, capable of critically reflecting on and reimagining their urban environments.

Perceptions of safety are a central concern when it comes to teenage girls and urban space. Studies have shown that fear of harassment, unwanted attention, and violence shape girls' mobility patterns, leading to avoidance of certain parks, streets, or transit spaces [12]. Such exclusions restrict not only physical mobility but also mental health and social development. For instance, lack of access to safe outdoor environments reduces opportunities for physical activity, increasing risks of sedentary lifestyles, while also limiting possibilities for peer bonding and identity formation [10, 14]. Feminist urbanists [4, 15] emphasize that urban safety is not only a matter of policing or surveillance but of social or a sense of belonging.

Feminist scholarship reframes access to public space as a question of rights, identity, and justice. Drawing from [16], notion of the right to the city, feminist theorists argue that equitable cities must include the voices and needs of women, girls, and other marginalized groups [4, 15]. Scholars argue that objectivity is not universal but partial, located, and embodied, making the lived experiences of teenage girls not only relevant but epistemologically necessary for understanding urban life [17]. Likewise, the concept of performativity provides a lens for seeing how teenage girls' interactions with urban environments constitute embodied negotiations of gender and space [18]. By avoiding, contesting, or re-appropriating particular sites, girls enact claims to the city that challenge dominant norms.

Participatory design has long sought to redistribute power in design practice [19]. Yet critiques persist that participation often remains tokenistic or extractive, particularly when working with vulnerable groups [20]. This paper focuses on adopting creative methods that allow participants to communicate through non-institutional, affective, and multimodal forms of expression [21, 22]. Recent scholarship in participatory approaches emphasizes the importance of centering marginalized communities not merely as informants but as co-creators of systemic and long-term transformations [23, 24]. Such approaches foreground equity, fair distribution of decision-making power, and inclusion, where diverse voices shape both process and outcome. Participatory frameworks

grounded in decolonial and feminist praxis argue that design must move beyond "consultation" to foster relational accountability, care, and mutual learning [25]. These perspectives reimagine participation as an ongoing negotiation of values and power. Moreover, creative and embodied methods enable communities to articulate lived experiences that traditional design tools often overlook [22, 26].

3 Methodology

This research engages with the socio-spatial experiences of teenage girls (13-18 yrs) in urban public spaces in London Borough of Wandsworth. A set of participatory workshops (Figure 1) were conducted with two different groups of teenage girls. Thirty girls participated in the study out of which 24 were from a local school and 6 joined through a local youth club. These participants belonged to different ethnicities, mainly to minority groups.

3.1 Mapping Everyday Experiences

The workshops began with a warm-up activity designed to help participants reflect on their everyday interactions within public spaces. Using large neighbourhood maps and prompts, participants were asked questions like, where do you hang out on weekends, and with whom; which public spaces in your neighbourhood feel safe or unsafe; what emotions do you experience while travelling around your city? The girls engaged in this activity in small groups to mark places on the map while sharing their experiences with each other and building on the emerging thoughts. This activity encouraged participants to visualize their spatial practices and articulate the affective dimensions of their urban experiences. Mapping also revealed patterns of exclusion, such as avoidance of certain parks or streets after dark, and highlighted sites of belonging, such as local cafés or community centres where they hang out with their families and friends.

3.2 Zine-making as Creative Engagement

The second activity formed the central component of the workshop that involved a combination of thinking and making processes. Zines were used as a primary mode of participation and engagement. Zines, self-published, small-circulation booklets often created with paper, collage, drawings, and text, have long histories as tools of countercultural expression, feminist organizing, and grassroots activism [7, 8]. Historically, zines have served marginalized communities as platforms for producing knowledge outside mainstream media [27]. Their origins in DIY publishing movements make them accessible, low-cost, and resistant to institutional gatekeeping. Zines are not just texts but material artefacts imbued with affective and aesthetic choices, producing meaning through the act of making [21]. This positions zines as powerful tools for self-expression and empowerment.

Participants were provided with blank zines (folded out of A3 sheet) and stationery material like coloured paper, magazines, markers, glue, stickers, and craft materials to design their own zines. The zines had prompts that guided their reflection. Some examples of prompts are - I wish the streets/parks had..., This is where I hang out on weekends..., This frightens me in urban public spaces... Besides these prompts, space was intentionally left blank for free drawing and expression. For example, on the front back cover of the booklet



Figure 1: Creative approaches were adopted for enhanced participation and free expression.

the participants were free to share more about themselves and what they enjoyed doing, like their hobbies. The zine making session ran for 1.5 hours and therefore consideration was taken that the girls did not have to fill the entire booklet but focus on parts that they wished to engage with.

Participants worked in groups of 5-6 girls who sat around a set of tables to work on the zines. Each group had one workshop facilitator who participated in the activity of zine making. This act enabled creating a sense of trust and invited informal conversations to take place. Through collage, drawing, and text, participants constructed these booklets that documented both their challenges and aspirations. For example, some created zines depicting unsafe bus stops, while others envisioned playful, colourful parks designed for girls' leisure.

3.3 Collaborative Storytelling

The workshops concluded with a collaborative storytelling session, where participants shared excerpts, images and /or drawings from their zines with the group. The workshop facilitators re-arranged the room suitable for a storytelling session, such that all participants face each other and sit in a circle. This facilitated dialogue and collective meaning-making. To make the sharing session feel like a space of mutual trust and free expression, the researcher and workshop facilitators initiated the session by sharing their experiences / stories from zines created by them during the session. This enabled the participants to feel more comfortable and empowered to share their stories freely with others. As girls listened to one another's stories, shared experiences of exclusion, such as fear of harassment, were validated, while aspirational visions such as safer, more playful streets were collectively amplified.

3.4 Ethical considerations

Given participants' age and the sensitivity of discussions proper ethical protocols were followed which included recruiting the participants through gate keeper organisations (school and youth club). Information about the workshop was shared with the gate keeper organisations in advance for obtaining parental and participant

consent. Participation was voluntary and anonymity was ensured for all shared materials. Engaging with the participants in presence of their teachers or youth club leader helped to overcome the challenge of providing a safe environment for sensitive discussions. Secondly, it resulted in a good participant turnout with meaningful engagement which otherwise can be a challenge. Facilitators' co-participation and ongoing reflection helped ensure that representation remained non-extractive and that participants retained agency over their stories. Participants retained ownership over their zines and could decide whether to share them during storytelling sessions or exhibitions. Moreover, Zines were framed as personal artefacts, with an emphasis on the process of making, reflecting, and sharing, and not as mere research outputs. Also, the participation from the facilitators made their positionality visible, reducing hierarchical distinctions towards collective exploration of experiences and aspirations related to public space.

4 Findings

The findings from workshops reveal how creative participatory methods, particularly zine-making, enabled teenage girls to articulate experiences of exclusion and envision alternative, inclusive and equitable urban futures. Across workshops, five interrelated themes emerged. Together, these themes demonstrate how zine-making served as both a reflective and transformative process, moving participants from passive observers of urban life to active agents in reimagining their cities.

4.1 Expressing Experiences of Exclusion

The zines designed by the participants revealed a shared sense of discomfort, fear, and marginalization in public spaces. Participants frequently described feelings of being watched or judged when they were outdoors. Participants wrote,

"When we go to a playground, on swings, people stare at us. They think we are troublemakers."

"I don't go out with my friends as it's not safe. I am scared of strangers."

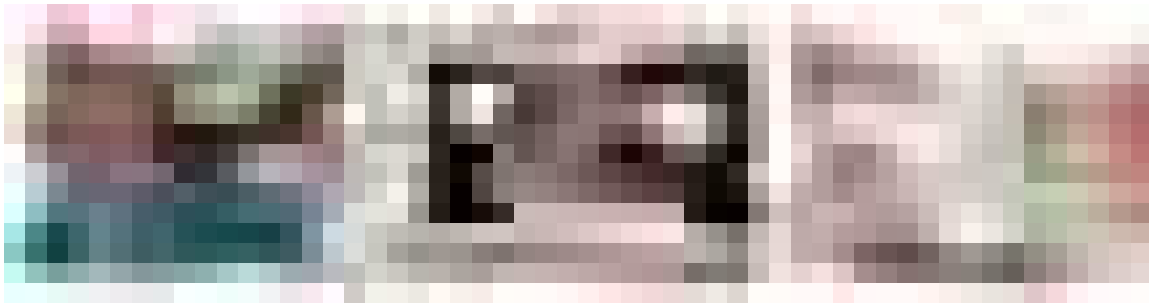


Figure 2: Visuals in the zines highlighted spatial politics of safety and gender.

These statements illustrate how gendered surveillance and moral scrutiny shape the ways teenage girls navigate and inhabit the city. Through mapping and storytelling, participants located specific sites like bus stops, playgrounds, streets, where feelings of unease or exclusion were most pronounced. For instance, areas with poor lighting, limited visibility, or predominantly adult male presence were marked as “unsafe.” In contrast, spaces that encouraged collective activity, such as school courtyards or neighbourhood cafés, were described as “comfortable” or “fun.”

By visually mapping and narrating these experiences, participants externalized their emotions and patterns of movement, making visible the often-invisible spatial politics of safety and gender, as seen in Figure 2. Importantly, this process reframed “fear” not as a private emotion but as a shared, socio-spatial condition; one shaped by design, policy, and culture. The methods adopted thus became critical spaces for unpacking how public environments shape young girls’ behaviour and mobility.

4.2 Building Trust and Collective Belonging

A defining characteristic of the participatory workshops was the creation of trust among participants. Initially hesitant, many girls gradually began to share personal experiences once they realized their peers had similar concerns. The tactile, playful, and non-hierarchical format of zine-making fostered openness and intimacy. Participants reported feeling “free” to express themselves, especially because the medium did not demand formal literacy or artistic expertise.

The process also helped dismantle hierarchies between researchers and participants. Facilitators made their own zines alongside the girls, inviting informal conversations (Figure 3). This reciprocity fostered relational participation [25], a participatory space built on empathy, mutual respect, and shared vulnerability.

“I only go out with my family on weekends or I stay in my room.”

Sharing such statements within a supportive group context generated collective recognition of their constraints. The methodological approach thus transformed isolated experiences into communal narratives. Trust was not merely instrumental to data collection; it became an outcome in itself, an affective infrastructure that sustained open dialogue and collective care.



Figure 3: The researcher and workshop facilitators participated in the session along with the participants.

4.3 Confidence, Agency, and Expression

The creative freedom of zine-making empowered participants to combine critique with imagination. The activity encouraged multiple literacies such as, visual, textual, and affective, allowing participants to express ideas through collage, imagery, or short phrases. Several participants reflected that a sense of confidence, such as quotes below:

“It felt like telling my own story.”

“It made me think about what I want the city to be and that my opinion also matters.”

This process of self-expression fostered confidence and agency. The act of deciding what to include, how to represent themselves, and what stories to tell positioned participants as authors and curators of their own urban experiences. Over time, participants began to shift from describing fears to proposing design ideas, such as below quotes.

“I wish the streets were safe and playful lined with sculptures and mirrors.”

“We should have some spaces to play with our friends.”

These aspirational statements signal an important transition from documenting problems to envisioning possibilities. The zines, as artefacts, embodied this transformation. They combined vulnerability with creativity, turning critique into a form of resistance. In feminist terms zine-making acted as a performative practice (see section 2), allowing participants to enact claims of belonging and authorship through making.



Figure 4: Storytelling session prompted a collective vision towards more equitable urban spaces.

4.4 Imagining Safer and More Inclusive Futures

In the final storytelling sessions (Figure 4), participants collectively shared their zines, discussing ideas for safer and more playful urban environments. Several groups imagined parks with art installations, interactive street furniture, or community murals that would invite young people to gather without judgment. These speculative visions reflected a collective desire for visibility and ownership in the city.

The act of collectively narrating these ideas strengthened participants' sense of belonging. The workshops became what feminist geographers refer to as spaces of hope or sites where marginalized groups temporarily suspend dominant spatial constraints to imagine alternative futures [4]. By bringing together critique and imagination, participants enacted "critical making": designing not just objects but collective ideas, relationships, and possible worlds and can be referred to [23].

4.5 From Lived Experience to Communicative Artefacts

Beyond their immediate value as expressive tools, the zines functioned as communicative artefacts or tangible outputs that captured the participants' perspectives and could be shared with decision-makers and community stakeholders. Their materiality gave form to affective, often ephemeral experiences of safety, exclusion, and aspiration.

When exhibited in the local community centre (Figure 5), the zines sparked dialogue among parents, teachers, the community, and local planners. The zines turned into expressive artefacts initiated conversations and dialogue among the public highlighting the bold and honest views of the participants. This indicates how creative participatory outputs can translate lived experiences into civic discourse. In this way, zines bridged personal storytelling with public engagement, expanding the scope of participatory design beyond workshops toward broader social and policy conversations.

5 Discussion

The paper demonstrates how creative and feminist-informed participatory design practices can move community engagement beyond consultation toward empowerment and transformation. Through zine-making, collaborative mapping, and storytelling, the paper



Figure 5: Public engagement session and exhibition of the artefacts (zines).

foregrounded the lived and situated experiences of teenage girls as critical knowledge for inclusive urban design. In doing so, it illuminated how participatory methods, when grounded in care, trust, and reflexivity, can reconfigure the politics of participation and representation in design research.

5.1 Zine-Making as Feminist Praxis

Zine-making in the workshops was not simply an expressive activity but a methodological praxis rooted in feminist epistemologies of situated knowledge [17] and performativity [18] (also see section 2). The process enabled participants to articulate experiences often silenced in mainstream urban discourses like fear, exclusion, and invisibility. As one participant shared,

"I don't go out with my friends as it's not safe - I am scared of strangers."

Such expressions, rarely captured through conventional survey-based or design-led engagements, surfaced through the affective and visual language of zines.

By blending personal storytelling with imaginative design, zine-making enabled participants to both critique and reimagine their city. The act of creating zines that included going through the magazines and other material to reflect on what it means to them, cutting, collaging, drawing, and writing, was in itself performative; it constituted a claiming of authorship and space. When a girl wrote, "I wish the streets were safe and playful lined with sculptures and mirrors," she was not merely expressing desire but enacting a speculative reconfiguration of the urban environment, one that centers play, joy, and inclusivity over surveillance and control. This process strengthens the understanding that zine-making embodies feminist principles of participatory design: it values subjectivity, and the everyday as sites of knowledge and power.

5.2 Building Trust and Collective Agency

A key outcome of the workshops was the formation of trust and solidarity among participants. The process of making and sharing zines cultivated relational ethics, a mode of engagement where care and mutual respect underpin collaboration [20]. Participants repeatedly emphasized how the sessions created a "safe space" for sharing. As one participant reflected, "When we go to a playground, people

stare at us. They think we are troublemakers.” In the zine-making sessions, such experiences could be voiced without judgment.

Through shared vulnerability, participants built confidence to speak about sensitive issues such as gendered surveillance and street harassment. This trust-based environment shifted the power dynamics typical of researcher–participant relationships, positioning the girls as co-researchers and co-designers. It also foregrounded the importance of process over output: empowerment emerged not from the production of artefacts alone, but through the collective dialogue and care embedded in their making.

5.3 From Expression to Empowerment

While zine-making provided an entry point for expression, it also functioned as a tool for empowerment and active participation. As the girls articulated their fears and hopes (see quotes below) they were simultaneously engaging in critical reflection on urban power structures. The process facilitated a shift from feeling constrained within the city to envisioning themselves as agents of change.

“I don’t like the gaze on streets while walking,”

“We should have some spaces to play with our friends”

In line with participatory design’s aim to redistribute agency [19], this paper demonstrates how creative practices can enhance participants’ sense of belonging and decision-making capacity. Several participants expressed increased confidence after the workshops, noting that they felt “heard” and “visible.” These reflections align with feminist calls to reimagine participation not as consultation but as co-authorship of social and spatial futures [25].

Moreover, zines as communicative artefacts extended the boundaries of participation beyond the workshop. When shared with local decision-makers, community members, and peers, the zines became material testimonies of girls’ lived experiences, thus bridging research, activism, and policy. They made tangible the affective dimensions of urban exclusion that are often overlooked in institutional planning documents.

5.4 Rethinking Power in Participatory Design

The research also raises important reflections about power dynamics within participatory design. Working with teenage girls, particularly from minority backgrounds, required careful attention to issues of voice, authority, and representation. Participation cannot be assumed to be inherently empowering; it becomes so only when participants have genuine control over the narratives being produced. During the workshops, the facilitators intentionally participated in zine making, thereby flattening hierarchies and fostering shared vulnerability.

While the workshops created momentary conditions of equality, broader structural inequities, such as gendered urban surveillance or lack of policy representation, remain persistent. Thus, the research highlights the need for participatory design to engage not only at the community level but also institutionally, where decisions about space and safety are formalized. As [28] remind us, sustainable inclusion requires challenging existing hierarchies and enabling marginalized groups to co-govern futures on their own terms.

5.5 From Engagement to Transformation

The methods adopted for this research exemplify how participatory design can move from engagement to empowerment, and has the potential to move further towards transformation. Through creative, feminist methodologies like zine-making, the study fostered belonging, agency, and collective voice among participants. It showed that participation, when grounded in care and creativity, can catalyse broader conversations on gender, safety, and urban justice.

By foregrounding embodied, situated accounts of teenage girls, the study resists the abstraction of urban planning discourse and re-centers the lived city as a site of feminist knowledge production. In doing so, it contributes to ongoing debates in participatory design about how to meaningfully include marginalized voices in co-design processes. Beyond methodological innovation, the research points to the necessity of institutional transformation, where participatory practices inform not only community engagement but also the governance and policy structures that shape the city itself.

6 Concluding Remarks

The research demonstrates the potential of creative participatory design methods to amplify marginalized voices in urban decision-making. By transforming personal experiences into public dialogue, these methods foster belonging, agency, and imagination. This research highlights that creative participatory approaches are not simply tools for engagement; they are vehicles for transformation. They enable participants to visualize equitable futures and invite institutions to reimagine how civic participation is structured. For participatory design researchers and practitioners, this calls for ongoing experimentation with creative, relational, and feminist methods that bridge everyday experience with systemic change for enhanced civic participation.

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Preconceptions of Participation: Municipal Care Professionals' Expectations of Co-design Processes

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Abstract

Participatory Design (PD) stems from early workplace projects where new technology and its impact were explored together with workers. While there is a long history of applying PD in the care domain, there is a lack of knowledge of professional care actors' perspectives and understandings of Participation. To address this, we have explored how municipal care professionals in Sweden understand, perceive, and attribute value to participation and how participation unfolds in their organizations. The paper presents a qualitative analysis of six events where about 50 care workers and managers, at each event (i.e. ~300 care professionals in total), have explored and discussed how they and their organizations understand and work with participation and participatory processes. Based on the analysis, this paper provides researchers with insights on how municipal care actors perceive participation, and how that can affect co-design initiatives in the care domain.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design.

Keywords

Participation, Participatory Design, Care, Work, Municipality, Co-design, Stakeholders' Perspectives

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1 INTRODUCTION

Participatory Design (PD) traces its roots back to early Scandinavian initiatives where researchers, industry labour unions, and their members collaboratively explored alternatives to management-proposed workplace technologies [9]. While contemporary PD also unfolds in non-work and unbound contexts where locations, actors, and roles are less defined compared with early-days PD [6, 7], work-related contexts and professional actors are still often part of many PD processes (e.g. [10, 14, 18, 22, 25]). This paper

contributes to the discourse on workplace PD by examining what preconceptions of participation municipal care organizations have.

The interest of PD researchers in the broader healthcare domain can be traced back to the early 1980th and the Florence project where hospital nurses engaged in PD activities [4]. Even with the history of PD work in the health and care domains, there is a lack of knowledge within the PD and HCI literature about care professionals and their organizations' understandings of participation. During the last decade, several PD projects have explored both institutional and out-of-clinic care situations (e.g. home care coordination [10], diabetes [3], handover routines [12], care networks [24], and collaboration among care professionals [18]). While healthcare-related PD projects may include non-professional actors (e.g. patients and volunteers), many of these PD projects are initiated together with, or tightly linked to, a professional care context. Accounts of participation in care development processes exist, but it is less studied what participation entails in care contexts and how participation is perceived by care professionals. However, examples of practice-based research exist that involves social care workers and their clients in research on shared knowledge, equality, and dialogue [23]. One of the few works that discuss participation in social work as a development effort also concludes that the term co-creation in social work is underdefined [35].

This paper presents an analysis of how care professionals (i.e. municipal care workers and care managers) understand and perceive participation in workplace development processes. This paper provides PD researchers with insights into how care professionals interpret the notion of participation and participatory processes and how that can affect PD processes.

The data used in this paper stems from several full-day events, conducted over the last five years, where municipal social care workers and their managers explored aspects of participation in their organizations. At each event, about 50 participants (different at each event) learned about Participatory Design, democratic development processes, and types of participation (drawing on Arnstein's Ladder of Citizen Participation [2]). Through group activities, they discussed and documented their own perspectives on participation, how participation is perceived at their respective workplaces, and values related to participation, power, and collaboration at different levels in their organizations.

While our study is situated in Sweden, a Nordic country with strong democratic and participatory roots, participatory initiatives at the workplace do not always translate into active involvement of stakeholders. The notions of participation for care workers and managers also differ depending on context and the municipality they work in.



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The following sections will now present Related works, Method, and Study findings. The paper ends with a discussion and conclusion.

2 RELATED WORKS

Participatory Design has a long tradition of involving workers in designing workplace technology, yet relatively little has been written about how workers and their organizations perceive and work with participation in development processes. We will now explore how participation has been discussed in PD and how PD processes have been implemented in organizations.

2.1 Participation in PD

Bratteteig and Wagner [11] have explored participation and user perspectives in PD, arguing that the degree of participation depends on the motivation for including people in design processes. They recognize that PD research often deals with methods and techniques for participation, while it remains unclear what participation entails and what results it provides. They state that participation is no guarantee for having power to influence decisions and identifies trust as a parameter when delegating power, referring to Pretty and his distinction of participation ‘as a means’ and as ‘a right’ [11, 30].

Luck [27] questions what makes participation in design to be participatory design, and Smith and Iversen [37] note that “the values and meaning of ‘participation’ itself are losing their significance” [37, p. 9]. Both papers also consider the researcher perspective and not the participants [27, 37].

Galleguillos et al. [26] discuss participation and involvement among less privileged project participants, include children with disabilities, refugees, and older adults with limited technological skills. These participants experience challenges to exercise their voice, that in turn limits participation. We argue that workers, for example in municipal care organizations (see data presented below), also can encounter challenges in making their voice heard and it is important to understand their perspectives and to create conditions for meaningful participation.

In the Careful Coding project, DiSalvo [15] also describes how they, as researchers, must balance their roles and levels of participation in a collaborative civic project, and that different stakeholder may not agree on what roles different stakeholders should have and what entails a productive form of participation.

Winschiers [38] has explored the perception of participation in the development of an educational management system in Namibia, and how ‘democratic participation’ did not entail active participation of e.g. teachers but instead translated into ‘being informed’ [38]. She concludes that “crossing disciplinary or cultural boundaries implies that one should reconsider established assumptions, concepts and habits that were taken for granted” [38, p. 1]. While there are many dimensions to Winschiers work, it also aligns with Arnstein’s Ladder of Citizen Participation [2] and similar taxonomies of participation (e.g. [13, 32]). Arnstein establishes a vocabulary of different forms of participation, ranging from Non-participation (Manipulation & Therapy), via Degrees of tokenism (Informing, Consultation & Placation) to Degrees of citizen power (Partnership, Delegated Power & Citizen control) [2]. Winschiers findings, where

teachers were informed, can be considered an example of Informing (Tokenism) using Arnstein’s ladder.

The above examples demonstrate that participation is not a word with one universal meaning. Context, culture, people, roles, and organizations involved influences what participation entails. While participation is a cornerstone in PD, the above works indicate a lack of studies that investigate the intrinsic and rich perspectives of what participation can be, especially from the perspective of non-PD researchers. Arnstein’s eight-step ladder effectively demonstrates the richness of participation, ranging from manipulation to citizen control, and gives us an initial vocabulary to explore what form participation takes in specific contexts and situations.

2.2 Implementing PD in Public organizations

There is a history of public sector PD engagements, but not without reported challenges [13, 33]. Fredricks et al. [16] also emphasizes that “the needs, wants and aspirations of local communities are not taken into consideration in the early planning and design phases” [16, p.1]. PD work involving municipal organizations often investigates citizen participation, including e-government initiatives [28]. Huybrechts et al. [22] have introduced the notion of Institutioning based on an exploration of how different institutional frames inform PD work and vice versa, and Grönvall et al. [18, 19] have researched how to establish and make PD work in municipal care organizations. These works highlight the need to better understand and respect such organizations, their needs, and how to enter in collaborations that are meaningful for the involved actors. However, how participation is understood and operationalized in public organizations in detail is not explored in the above works.

Living labs has been used in (democratic) public sector innovation, predominantly with an active citizen (or ‘user’) involvement [5, 17, 20]. PD researchers have also worked with labs, where for example librarians have learned about co-design [1], but it remains unclear if the researchers intentionally explored the librarians’ pre-conception of participation. Overall, it remains difficult to find reports on public sector workers’ perspectives and understandings of participation. Pirinen et al. [29] present challenges and opportunities of working with design in a city context based on interviews with high-level managers and designers in Helsinki. They mention organizational maturity in terms of doing design work and the need to bridge differences between public organizations and design. While their work is relevant, it addresses design opportunities in public organizations at a different level than our study, which focuses primarily on frontline staff and their local managers. While the above studies deal with municipal and public sector engagements, with a wide range of stakeholders, they are not providing detailed accounts of these organizations and their workers’ preconceptions of participation. We consider the stakeholders’ understanding of participatory processes and their values as a fruitful starting point to foster a shared understanding and create conditions for collaboration and PD work.

3 METHOD

The empirical data were generated over a period of five years during six full-day events organized together with a Swedish municipal care research centre.



Figure 1: Social workers and mid-level care managers discussing participation.

The participants were social workers and mid-level managers from 13 municipalities. In total, roughly 300 care professionals have participated in one of the events, with about 50 participants each time. At each event, the first author introduced participatory design, mutual learning, democratic change processes, participation in work processes, as well as Arnstein's Ladder of Participation. The presentations provided the participants with theoretical perspectives to be used in the workshop parts of the event. During the workshop part of the events, the participants worked in groups of 4-6 people where roles and organizational belonging were mixed (Figure 1).

The workshops consisted primarily of discussions facilitated by pre-made workshop materials (Figure 2). Discussion topics covered participants' perspectives and experiences of participation and collaborative development processes in care work. They also discussed how care professionals perceive themselves and their lived experiences of participation in their workplaces, drawing on Arnstein's ladder.

In total, 47 groups have discussed and documented their thoughts on participation and Arnstein's ladder, and 37 groups have discussed and documented reflections regarding co-design in social care organizations. At each event, the participants have given their consent to ensure that the data can be used for research.

The data analysis process involved several steps (see Figure 3). In step 1 the handwritten data from the groupwork was digitized, except for a few handwritten notes that could not be interpreted. In step 2 and 3, the authors first read through the data and then two affinity diagrams [21] were generated – one per dataset (i.e. CoDesign and Ladder of Participation). The process unfolded iteratively; as we clustered data, we went back to the raw data to check for quotes and context when clarifications were needed. In step four the two affinity diagrams were again reanalysed, resulting in the identification of five overall themes (i.e. Degrees of participation, (Un)invited to participate in change, Organizational (un)readiness, Structural factors affecting participation, and Future state - More of it all). In step 5, we did one more round of data generation (i.e. an additional event) where we, based on our analysis, asked the care professionals for more concrete examples from their work.

4 STUDY FINDINGS

Data across the entire analysis represents a striking image of the perceived low participation in collaborative work and design processes across the field of social care work in Sweden. At the events, the care professionals repeatedly pointed toward the low level of participation or explicit non-participation as the status quo in their organizations. They also highlighted the low organizational readiness to scaffold participation and participatory change-, and design processes. The following sub-sections zoom in on two of the five identified themes (i.e. Degrees of participation and Organizational (un)readiness) to articulate some key aspects of our analysis.

4.1 Degrees of participation

Most participants agree that they participate in change and design activities at work, although to different degrees. Active involvement in participatory processes is more present at local levels where participants feel they have agency and the possibility to influence everyday practices. One of the groups states "in smaller units, co-creation is included to a greater extent". Participatory processes initiated higher up in the organization often lead to less perceived agency and involvement. To illustrate, one group states that: "At the unit level we do [work with co-creation]. It becomes more difficult higher up in the organization". Development processes are often initiated by mid-managers while care workers' participation can be regarded as 'being informed'. While the care professionals experience being involved in collaborative design processes, especially at a local level, they also describe their involvement in change, design and development to often be at the bottom of Arnstein's ladder (i.e. manipulation, therapy, and informing). Groups also reported a lack of mandate when participating in processes at an organizational level.

There are care professionals that do not wish to participate in work development processes, or experience not having the time to participate. Some of them are not motivated or simply find it irrelevant. One group also state that "it is important to listen and not have drawn a map (of the process) in advance" referring to the feeling that sometimes they get asked to participate, when key decisions have already been decided on beforehand without their involvement. They mention being invited to a process but only with a "fake mandate". In the vocabulary of Arnstein, their participation becomes tokenized. They postulate for higher involvement and



Figure 2: Compiled workshop materials.

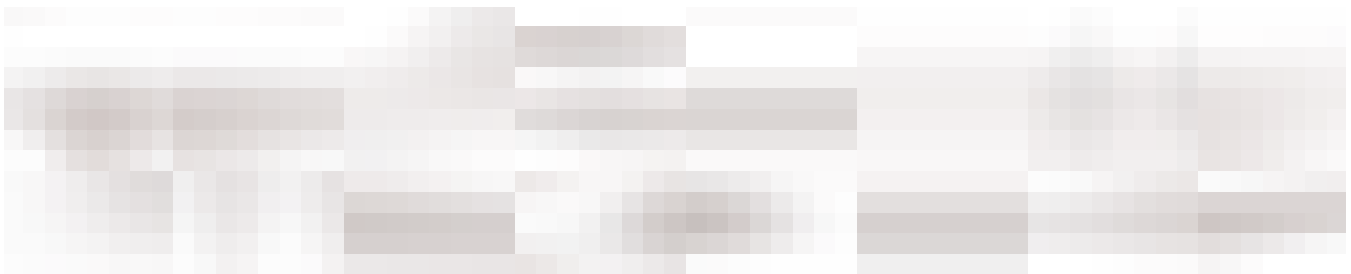


Figure 3: Data analysis process.

transparency, especially when it comes to major digital changes. The care professionals mention they often have only been partially invited to redesign or implement organizational IT systems. The care professionals express that they often aspire to be in the middle of the Arnstein's ladder (placation), but that they often find themselves on the lower information-level. That said, they report that they at times are asked to participate in creating good conditions for implementing new IT systems, for example by creating how-to manuals for their peers. While appreciated, they also perceive this as a limited form of participation, a kind of damage control, without any real possibility of influencing the system.

The care professionals also mentioned the need for 'safe spaces' where their voices could be heard among the multiplicity of voices and opinions potentially present in a multidisciplinary and multi-stakeholder process. One group explicitly requested conditions "for everyone to tune in and be heard" as a prerequisite for genuine participation.

4.2 Organizational (un)readiness

The lack of organizational readiness to work with participatory processes has been hinted at by the care professionals, yet with

a hope of change. Organizational aspects mentioned that limit participatory processes at the care workplace are structural factors such as lack of time and budget. One group state: “We work with co-creation only partly. The resources, time and collaboration are missing”, echoed by another group: “the will is there, but it’s difficult due to lack of time, laws, and the ability of users”. A strategy on how to evoke a higher organizational readiness is exemplified by one group as: “They [management] can say no at first, but one plants a seed of thought” pointing towards a possibility to shift the status quo even if slowly. Organizational unreadiness manifests itself by the profound need for clear frames and conditions to work with workplace change processes, which the care professionals often expect to be provided by management. One group describes the expected management responsibility to “make it evident what’s possible”, illustrating the need for organizational frames. In addition, the care workers demonstrate little flexibility in applying participatory work methods in their practice. They tend to ask for ‘workshop scripts’ that are universal and ready-at-hand, to feel comfortable planning and conducting collaborative design processes with the involvement of different actors. One group participant had experience with a five-step framework for engaging in co-creation processes and they appreciated its clarity (emphasizing a clear structure, action plan, and evaluation). A few groups have indicated that they can “shape (activities) according to what is relevant” or “develop methods based on workflows”.

Similarly, existing best practices among care professionals represent rather passive forms of participation. Surveys, meetings, focus groups, and emails are mentioned, underlying the current perception of participatory practices. During plenum discussions, the care professionals often mentioned the need for them to learn more about specific methods and tools to facilitate participatory development processes.

5 DISCUSSION

The participation of diverse stakeholders is a fundamental aspect of PD. However, the notion of participation is not ‘one size fits all’ and it cannot be taken for granted that all people and organizations perceive participation uniformly. As PD researchers we can fall back on established values of participation, including the importance of mutual learning, early prototypes, and democratic participatory design processes [8, 31, 34]. However, neither of these perspectives inform us about the perceptions, and politics, related to participation seen from our stakeholders’ perspectives - something we argue directly affects PD researcher-stakeholder collaborations. We wonder how the PD process might look different if we, as PD researchers, were more attuned to our collaborators’ understandings of participation and PD – and how they, in turn, perceive our role and intentions.

This paper unfolds care organizations and their workers perspectives on participation. In doing so, we exemplify how the actors that PD researchers often refer to as being project participants, stakeholders, or future users, understand and value participation. Our study is situated in Sweden, a Nordic country with strong democratic and participatory roots throughout society, while organizational perspectives may look different elsewhere. That said, our work reveals that participation can mean different things for

different stakeholders. This in line with DiSalvo [15], who describe how different actors can have different ideas of what a productive collaboration entails, including expectations on other stakeholders. We would like to better understand how PD processes would be affected if we dedicated resources to uncover those expectations and underlying perspectives.

At an overall level, care professionals wish for increased participation in everyday decision making and work development processes. Some municipalities also perceive participation as a strategy to work with internal development processes. However, there is a lack of organizational readiness and resources to support participatory processes. The municipal managers we have encountered perceive participation as a strategic aspect of their work and development efforts, in line with broader Swedish agendas on municipality care [23, 36]. However, it is less established what participation entails in (social) care [35], in these organizations, and how they can support their staff and the overall organization to establish a participatory mindset in development work. This study has allowed the participants to reflect on the role of participation in their own organizations. This knowledge can in turn inspire them to challenge status quo and how they are invited (or not) to participate in development processes. Especially when initiating new PD-based collaborations, we suggest that PD researchers, together with the different actors, discuss, explore, and juxtapose how they perceive participation and their expectations on participatory processes. This may not be seen as a radical suggestion, yet we suggest it can serve as a reminder to prioritize this in PD work – and to report about it in future publications.

Many of the care professionals are regularly involved in participatory processes, at different levels on Arnstein’s ladder, but it is unclear how much training they get on working with a participatory mindset. At the events, many of the care professionals expressed an interest in learning more about participatory workshop methods, tools, and techniques. While the format of the one-day events described in this paper could not fulfil that wish entirely, we have worked with care professionals in other situations that have prioritised capacity-building regarding participatory processes. In line with Bratteteig and Wagner [11] our data exemplifies how participation by itself is no guarantee of having real power. For example, when the care organizations invite care professionals to participate in development work, that often translates into being informed or that fundamental decisions have already been made. Galleguillos et al. [26] describe the difficulties faced by less privileged groups in making their voices heard in project work, and the care professionals we encountered expressed similar challenges. Especially in the development of new IT systems or larger development initiatives it can be challenging for the care professionals to get their voices heard. Consequently, when PD researchers work with these organizations, strong preconceptions may exist among organizational leaders, managers, and workers regarding roles and what participatory processes entail. This in turn can influence their willingness to engage in participatory processes and their perception of the resources needed (e.g. who should participate and how much time should be invested). If municipalities aspire to have staff actively participating in internal design and development processes more than at a tokenization-level, we argue they must take

capacity-building regarding participatory and democratic processes seriously.

While procurement processes can negatively influence participation in larger IT development projects [13, 33], participatory processes can still have an impact working with micro-innovation and local processes. Even when new technology is needed in a local care situation, it may not require a separate procurement process if existing software, a smartphone, or other off-the-shelf technologies can be used. We argue that, especially on a local level, it is still possible to implement technology and new ways of working based on democratic, active participation and alternatives from the workers.

6 CONCLUSION

Different professions and workplaces may attribute different values to participation, technology, collaboration, and development processes. As PD researchers we must understand that our interpretation of participation is not necessarily aligned with others' understanding of the word. To ease researcher-stakeholder(s) collaboration a multilateral understanding of how we perceive participation and collaborative design processes is valuable.

One role of PD researchers can be to invite care professionals to partake in scaffolding organizational readiness within the organizational constraints. Especially in long term PD engagements, there is an opportunity to more profoundly engage with municipal employees and their organizations and thereby contribute to empowerment and agency. However, in shorter PD engagements the impact of not having a shared understanding of participation can have a larger impact as there is less time to learn about each other's perspectives. In both long- and short-term PD processes, PD researchers can provide knowledge about participation and participatory design and development processes, including relevant methods and tools. However, applying a method on its own without a deeper participatory mindset might hinder a broader impact of the approach. If PD researchers address the above challenges, new opportunities can be established to collaborate with public organizations in their quest for more participatory approaches. In return, that can create a more fruitful and reciprocal environment for PD researchers to engage in PD work with public organizations and their employees. While we have worked in a municipal care context, we argue there is a need for PD researchers regardless of context to better understand the fundamental values and preconceptions of participation among their collaborators.

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Participatory Design as Political Love Today

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Abstract

Despite the centrality of affect in Participatory Design (PD), love remains largely unattended. We propose PD as political love: not sentiment or method, but an orientation of vulnerability, care, and constant change that embraces ambivalence rather than eliminates it. Amid escalating wars, ecological crises, and social fractures, we turn to love as a lens through which PD might reimagine coexistence and collective responsibility. Drawing on Lauren Berlant's account of love as a scene for becoming different, we revisit two contemporary PD mainstays – commoning and entanglement – querying them in relation to three qualities of love: ambivalence, fantasy, and unlearning. In doing so, we recast PD as the non-sovereign labor of living together with contested attachments, imaginaries, and institutional frictions, without recourse to fantasies of mastery or resolution. We close with a letter to the PD community that invites response, opening space for ongoing conversation.

CCS Concepts

• Human-centered computing → Participatory design.

Keywords

Love, Commoning, Entanglement, Ambivalence

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1 Introduction

Despite the pervasiveness of affect in participatory practice [1, 16, 17], love remains conspicuously under-theorised. This absence is not accidental. Love carries baggage: it is freighted with heteronormative, romantic, and sentimental associations that can obscure its social, collective, and political dimensions, and often render it difficult to reconcile with the critical ethos of Participatory Design (henceforth, PD). However, in the current era, marked by escalating conflicts, anxiety, and grief, we have found comfort, courage, and inspiration in talking to each other lovingly. For us, writing this

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paper together has become a modest practice of mutual recognition of vulnerability, care, and change. Both the paper and the process that has brought it to life respond to PDC's call for conversation on "Peace, Dialogue, Coexistence" – perhaps unusually, but hopefully embracing love as a lens for PD's situated practices and collective ambitions. We take Pelle Ehn's provocation to understand PD as "becoming an anxious act of political love" [27, xiii], which particularly resonates with the central question of this year's PDC – "how can participatory design facilitate living together?" – in times of wars, social fractures, and ecological crises. With different positionalities – of gender, geographical location, and career trajectory – we were compelled to ask ourselves and one another what it means to practise PD as political love now. That is, how love, conceived politically rather than sentimentally, would name a willingness to remain involved in the fraught work of living together: to be transformed by attachments even as they unsettle us. Our collective inquiry is oriented by cultural theorist Lauren Berlant's reminder that love is "one of the few places where people actually admit they want to become different"¹ [18]. For Berlant, becoming different is not a heroic leap but (often) slow relational labour that is inherently destabilising and ambivalent, revealing other possible worlds. This is precisely where PD has always operated, though without the language of love. The partial and provisional outcome of our exploration is this paper. We move through two concepts that are already common in PD research – commoning and entanglement – and then read PD through three qualities drawn from our understanding of love, namely fantasy, unlearning, and ambivalence. We choose commoning and entanglement as the central concepts of this paper because they allow us to attend to the dual nature of Participatory Design as both infrastructure and relation. Commoning foregrounds the infrastructural dimension of PD – the ongoing collective work of sustaining, repairing, and sometimes witnessing the failure of the material and institutional arrangements that make participation possible. Entanglement, by contrast, emphasises PD's relational and affective dimension – the attachments, dependencies, and transformations that emerge in the process of living and designing together. Our aim is not to offer prescriptive methods, but instead to propose an orientation: PD as political love, attentive to attachments that sustain and expose at once, to infrastructures that both hold and fail, and to institutions that must be composed and recomposed. In what would traditionally be the "discussion" section, we follow up on these by closing with a letter to the PD

¹Love has been widely theorised in cultural theory and in feminist, decolonial, and Black radical traditions (for example bell hooks' *All About Love*). We focus on Berlant because their theorisation of affective attachment, ambivalence, and fantasy is particularly proximate to this paper's concerns with the commons and the affective entanglements they sustain. Berlant also provided a key point of convergence in our prior, separate attempts to conceptualise love, enabling a shared vocabulary within the constraints of space.

community, a form that has gained renewed attention in PD for its potential to invite response and counter-story – to “reach out for (critical) replies, discussions, other stories and perspectives” [15] – in order to open dialogue rather than secure closure.

2 Commoning

The concept of commoning has gained increasing attention in academic circles and social movements as an alternative to organisational forms based on stable hierarchies, whether state-run or private, and it was introduced to participatory design a decade ago [24]. Building on Ostrom’s studies of common pool resources [24], the discourse around commons has evolved to include more dynamic and relational approaches, such as that proposed by Linebaugh, who introduced the term commoning to describe the social practices that bring commons into being [24]. From this perspective, the commons is not merely a “thing” or a set of shared resources, but a process involving people (commoners) and practices (commoning) in ongoing collective negotiation and care [12]. In the field of technology, commoning has found expression in practices such as free and open-source software development, Wikipedia, and more broadly in peer production. These examples demonstrate how digital infrastructures can be built around collaboration, transparency, and distributed governance, challenging the proprietary and hierarchical logics of digital capitalism, while reminding us that digital commons are not automatically anti-capitalist, as they can be folded into business models that exploit collaborative dynamics [13].

Within PD, commoning takes on a generative function: it enables the articulation of potential futures, imagining of alternatives, and the construction of shared narratives [23]. PD has developed this via infrastructuring and institutioning [19]. Infrastructuring indicates the long-term relational labour of linking actors and devices to sustain collective action [25]; institutioning concerns how these practices interface with existing institutions or generate new ones [20]. As Star [28] reminds us, infrastructures are ecological and relational, often invisible until breakdown. Attending to breakdowns shows how commoning and infrastructuring alike are necessarily precarious: frictions, maintenance, and repair reveal what is held in common, and for whom, foregrounding ambivalence as constitutive rather than a problem to be eliminated.

The role of the researcher/designer is crucial in this scenario: it is not only about facilitating processes, but about positioning oneself within them, acknowledging one’s political and affective implications, capability to generate trust, solidarity, and a sense of belonging [23]. In this respect, we can follow Berlant [5] in recognising that attachments – whether to projects, infrastructures, collectives, and speculative horizons – are never neutral supports but ambivalent relations that both sustain and expose participants to risk. Engaging such attachments can cultivate intimacy and care, yet it also sensitises participants to loss and vulnerability. These affective dynamics are central to PD’s political work, such as the one implicated in commoning practices: they keep open a willingness to remain involved in ambiguous and ambivalent relations [5].

Within design teams, commoning clarifies how individual participation relates to the collective dimension of the project. The

construction of collectives is never given, but is the result of situated and ongoing practices, mediation, and care. Collectives are fluid entities, composed of human and more-than-human actors, formed and transformed over time through distributed activities, shared identities, and orientations toward the future [20]. Intermediation becomes crucial here: connecting different worlds, translating needs and visions, and supporting co-evolution among subjects, technologies, and contexts [30]. Commoning in PD is therefore not a model to be applied, but a process to be negotiated, a set of tensions to inhabit, and a possibility to cultivate, to aid us in asking who bears the boats of fragility, who benefits from stability, and how rules-in-use are adjusted as relations change.

In summary, commoning offers PD a critical and generative lens for rethinking design’s role today. It is not only about designing for the commons, but designing as commons, recognising that every act of design is also political, affective, and relational. In this sense, commoning is not just a practice, but a posture, a sensitivity, and a promise: the promise to build shared, open, and plural worlds [23]. As the next section on entanglement shows, this promise is inseparable from living-with human and other-than-human relations, including their risks, reparative potentials, and ongoing reconfigurations as the condition of PD.

3 Entanglements

PD’s recent experiments with commoning amid eco-social crisis have unfolded alongside a deepening engagement with entanglement, particularly as more-than-human (MtH) debates unsettle PD’s historically anthropocentric orientation. Entanglement refers to not only the intricate webs in which design is situated, but also the attachments and ongoing transformations that relations enact. To be entangled is to be implicated, always, in processes of becoming – to recognise that relations with others, human and other-than-human alike, are constitutive of who we are and might yet become [2, 26].

This reframing shifts PD from its historical focus on human–human negotiation and empowerment in infrastructuring and institutioning [20, 21], towards a broader field of relations that exceed the human and interweave ecological systems, digital infrastructures, material flows and multispecies communities. In periods of upheaval marked by climate breakdown, political polarisation and algorithmic governance, such entanglements become acutely felt, reconfiguring sites, stakes, and scales of participation. Entanglement here is not a coordination problem awaiting resolution but a condition to which we must continuously respond – a condition saturated with uneven dependencies, partial knowledges, and distributed harms.

Responding to this condition demands an ethos that resists the preconditioning of human exceptionalism, colonialism and Western-modernist progress narratives when imagining ecologically sustainable futures [31, 32]. Simultaneously, it insists on just and equitable technosocial arrangements that move beyond participation-washing in data-driven extractivist systems [10, 11]. MtH PD thus foregrounds the ever-partial and situated practices of *living-with* over discrete projects with bounded outcomes, and highlights how entanglements are not abstract but lived, visible in the frictions and vulnerabilities of shared existence. In this sense, entanglement is

not something to be managed or resolved, but a condition to which practitioners must continuously respond.

These orientations are emergent across co-creative art–design research. The EU Horizon Project CreaTures is exemplary: a trans-disciplinary programme that explored how art and design can foster eco-social transformation by mapping existing practices, generating experimental productions, directly engaging stakeholders, and developing evaluative resources. Light, Choi, Houston, and Botero [22] report on how CreaTures treated entanglement as a methodological–ontological stance, which allowed the project to operate as a prefigurative infrastructure rather than a representational container. This re-arranged collaboration, evaluation, and accountability under pandemic constraints, making the project itself an object lesson in enacting relational ethos and surfacing the tensions this creates within functionalist funding regimes. For PD, CreaTures suggests how “research projects” can be intentionally repositioned as infrastructures of relations, and what frictions this generates against prevailing institutional norms.

Attending to entanglement means taking *attachments* seriously, including their paradoxes. As argued in the previous section, following Berlant, attachments both sustain and destabilise; they nourish and offer hope, while exposing us to dispossession and grief. Understood this way, change is not episodic disruption but “the only constant” [10]. Ecological cycles, infrastructural updates, and political events continuously reconfigure the grounds of participatory practice, rendering non-sovereignty a structural condition of PD. Continuing our drawing from Berlant [6], “sovereignty is the name for a confused, reactive, often not-quite-thought view that there ought to be a solution to the pressure of adapting to ‘other people’ and to other nations’ force of existence, intention, action, entitlement, and desire ... thus a fantasy of jurisdiction.” So non-sovereignty here names neither passivity nor abdication, but a practical-ethical stance that refuses fantasies of mastery over complex worlds, recognising that agencies, accountabilities, and harms are distributed across more-than-human relations.

Further, non-sovereignty does not suggest rejecting governance or rights. Instead, it reorients them towards coalitional, situated arrangements that can be collectively stewarded and continuously evolve. In this way, it aligns with PD’s agonistic lineage – designing for contestation, maintenance and partial closures rather than definitive settlement [9]. In practice, a non-sovereign PD assumes response-ability [2], tending to relations in flux, cultivating sensitivities to difference and consequence over closure, and in this process, rendering care as a practice of attentiveness to unstable interdependencies rather than mastery or rescue [26]. As the next section elaborates, embracing a non-sovereign perspective in PD allows accounting for the co-presence of fantasies, ambivalences, and moments of unlearning in PD practices.

4 Ambivalence, Fantasy, Unlearning

Love is often idealised as the resolution of contradictions. Following Berlant, we treat it instead as an ongoing labour of living with contradiction – an orientation to *ambivalence* that is constitutive of collective life rather than a defect to be removed. It is not incidental that the commons has become central to this labour. Berlant calls the commons “a powerful vehicle for troubling troubled times” yet

highlights that the contemporary attachment to it frequently positivises ambivalence, rendering uneven experiences of fairness and belonging into a hopeful scene that reinforces structural antagonism [7]. This ambivalence is often visible in PD projects engaging with commoning [29], where infrastructuring’s openness to provisional collective lives [8] continually rubs against institutioning’s drive to formalise; what is sustained for some may feel precarious to others. Rather than denying this tension, PD as political love would name the willingness to remain involved in it and organise ambivalence as a shared condition of becoming together.

Fantasy is central to this process. For Berlant, without fantasy, there is no love; here, fantasy is not escapism but a coping structure, which allows subjects to sustain contradictory relations with, or remain attached to, objects or scenes that both secure and undermine them. PD has long practised with such devices, particularly in its entanglement with utopia. Utopian imagination – from the UTOPIA project’s vision to empower workers in technology design to later repertoires of prototyping and speculative scenario building – enables participants to research alternatives before their existence [3, 14]. PD continues to aim at enabling diverse, modest, and collaborative futures, challenging dominant imaginaries of innovation, design, and democracy, turning the gaze toward the here and now of collectively designing what may and may not come. The utopian drive in PD thus carries not only the optimism of transformative possibility, but also the affective weight of longing for what may never fully arrive. Pelle Ehn [15] captures this tension in his reportage on utopias in PD, describing them as marked by a “melancholic undertone.” This does not point to hopelessness, but to the need to remain accurate to what is not yet while reckoning with what is.

If fantasy organises ambivalence by offering provisional coherence, *unlearning* engages ambivalence by refusing resolution. In reflecting about the commons, Berlant frames unlearning as a pedagogy for surviving in a malfunctioning world: training ourselves to bear the discomfort of difference and ambivalence instead of fantasizing about a smooth plane of likeness or frictionless harmony, where justice equals the absence of frustration. This resonates with the concept of non-sovereignty explained earlier, and calls for unlearning across multiple planes of PD. For example, unlearning may entail interrupting fantasies of mastery that creep back into our methods that prioritise particular voices (e.g. humans), forms of data and tools for generating data (e.g. verbal and representation-centric), facilitation that aims at eliminating conflict and achieving consensus.

Unlearning for us also concerns engaging with PD as a collective and commoning practice. For instance, experiments undertaken in CreaTures [22] challenge “productivity culture” and the logics of financialisation by offering experiences of radical acceptance and collective care. Similar tensions emerged in Commonfare, where unlearning was demanded by the clash of divergent understandings and ontologies of poverty between the funding agencies (e.g., Eurostat) and the collectives involved. European institutions, policymakers, and statistical frameworks tend to label people as “the poor” or “at risk of poverty or social exclusion”, categories that position them as subaltern, defined by a lack of fundamental resources (such as human or financial capital) or by a dependency on

external provisions (such as welfare). By contrast, project participants resisted this neoliberal rhetoric of “poor-shaming,” instead foregrounding the value of shared commitments and collective belonging [4]. For many, the commons became not only a framework for material support but also a means of countering loneliness and isolation, affirming dignity and solidarity beyond deficit-based classifications.

These examples demonstrate how success can be reframed in PD. As PD projects – especially those engaging collectives [20] – confront the unevenness, violence, and contingency that characterise social life, researchers and practitioners are called not to deny these contradictions or force premature reconciliation, but rather to cultivate practices – through fantasy and unlearning – that enable living with ambivalence as an ongoing condition. Success of PD as political love thus is not about embedding the soft surplus to technical work; it fundamentally concerns the infrastructure of participation itself.

5 Letter to the PD community

We end this paper in an unusual form: a letter. This is a practical and hopeful decision to foreground relation and accountability in knowledge-making. A letter is sent from somewhere and to someone, making positionality explicit while refusing the sovereign undercurrent of “general” conclusions. It also creates an opening for ongoingness rather than a closure, as letters often invite reply, counter-story, and contraction, thus becoming infrastructures for dialogue. By adopting this form, we hope to better align our work with PD’s agonistic lineage of enlivening collective action for both contestation and care, while holding space for attachments, ambivalence, and unlearning as shared labours rather than problems to be resolved. Finally, the letter is our own attempt at practicing PD as political love – a hesitant gesture, a crack that reveals an infrastructure, a fragile commons that requires nurture – and to speak with one another, and with you, in the situated and affective register that a politics of love demands [6].

Dear friends and fellow travellers,

We’re writing because staying with one another feels especially necessary these days. Not to set terms, not to tidy the complex mess – be it social, ecological, political, and more – but to keep weaving what holds our practice together in PD in difficult times. Love, for us, has come in many different registers – for example, when we keep listening when our methods or institutions would prefer closure; when we bear witness to breakdowns that make infrastructures newly visible, and; when we are profoundly changed by the very scenes we set in motion. So we write to you, a community of many different PD practitioners, with a question-provocation: how can we let love reign in our practice and stay there for a while?

To be clear: we do not believe that letting love reign is a matter of prescribing a tool. We resist imagining the sovereign imposition of love as principle, method, or technique that can be slotted into the next workshop. Political love names an orientation in becoming-with – staying attentive, vulnerable, and open to transformation – including when transformation is slow, uneven, or unwanted.

We know that this orientation rubs against the recurring fantasy of control in knowledge-making practices. Many institutions still ask PD to be neat, fast, and measurable. We feel that pressure when

a project is judged by distinct outputs rather than what it did with relationships, trust, or shared capacity. When this is compounded by the demands of neoliberal academia that increasingly prioritises audit cultures, impact metrics, and entrepreneurial postures, we are compelled to perform as change-makers who bestow a gift of transformation upon others.

We will do well to remember that love is not free from the desire to possess, but love also asks us to not arrogate, to relinquish dominance, and to refuse the dominant choreography that casts designers as benefactors and others as beneficiaries. How can we create spaces to practice non-sovereignty, where we cultivate shared unsettling, recognise our vulnerability not as a flaw to be managed, but a condition for collective becoming, and allow relations to change us as much as we seek to change them?

Yes, some may call this an absurd fantasy. But we know now that without fantasy, there is no love – fantasy not as escape, but as the tether that keeps us engaged with complex realities. We know this dynamic well in PD, particularly in our utopian speculative work on commoning. Saying “our love” or “I imagine us...” may carry a sentimental and at times even melancholic undertone. But they can effectively re-arrange desire while keeping hope with the not-yet, becoming less about representing a future and more about holding open space that legitimises ambivalence as a generative infrastructural force.

Such spaces cannot be sustained without deliberate noticing of small things like the hesitant gesture, the warmth of a voice, the quiet refusal in a pause. Too often these are considered irrelevant background noise, but they are in fact the stuff of tacit knowledge and practice that enable collective living. Indeed, as we have seen, infrastructures are usually invisible until they fail, and breakdowns render attachments legible. When negotiations stall or animosity surfaces, it is often because something has faltered in the tacit sustaining of presence. In our practice, the art and politics of noticing is how we can resist abstraction and engage with the situated, the ordinary, and the hidden.

We don’t think we can do this without expanding the language of PD, so it would be helpful for us to be more proactive and explicit in involving other ways of communicating. Post-its, canvases, and flowcharts have their place, but defaulting to them risks constraining our language to the verbal and visual. We can continue and amplify engaging with multi-sensory modalities that keep the body-multiple in the frame. This may involve, for instance, physical movement, sound, touch, and scent to legitimise ways of knowing that are plural, tacit, and more-than-human, to genuinely have a chance at broadening the field of collective imagination. We know that we must ask who is paying the cost of our clarity. Can we risk saying what a metric cannot hold?

This points to a possible reframing of success in our work. Instead of correlating it with clarity, efficiency, or scale, as we unfortunately continue to do across design and research projects alike, we can ask, for example, what infrastructures of participation were (re-)formed, which attachments were nurtured or coerced, and how ambivalence was tended to or denied. In doing this work, we invite documenting and sharing trouble – from frictions and refusals to failures and fears, as well as hopes and recoveries. These are not waste but they can form an evolving map for our community to better navigate

challenging institutional terrains and trusted accounts of what PD can be.

In this spirit, we advocate for cultivating love literacies. By this we mean the shared capacity to articulate the care work that holds collectives together, to acknowledge the melancholic undertone of our utopias, and to narrate our own implication in scenes of harm and help. These are not competencies to be mastered but to be cultivated in practice, collectively.

Again, we recognise that doing this is demanding, particularly in today's competitive academic environments and in times of war, austerity, and ecological grief, where vulnerability is treated as weakness and ambivalence as inefficiency. Still, we dare to suggest that PD can be a place where love literacies are welcomed and sustained.

So we ask, again and for the record: how do we teach ourselves and others to live with ambivalence, fragility, and interdependence without treating them as failure? What do these commitments require of our practices, partnerships, and institutions? How do we resist the sovereign logics of control and closure in knowledge-making while remaining accountable for consequences?

We do not offer a blueprint. Instead, we offer a set of questions and a commitment: to notice, to change, to become-with, to love. Let's practice this from within, making space for the ordinary, the fragile, the unfinished, even when we are asked for clarity and efficiency. Let love reign – not as a sovereign command, but as a collective and unruly practice of care.

With warmth and solidarity,

We, fellow participatory designers

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Waiting to Learn, Learning to Wait

How 'waiting' as a neurodiversity-affirming approach can inform inclusive participation

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Abstract

'Waiting' has been introduced as a neurodiversity-affirming approach within the autism community, facilitating interaction and communication between groups of different neurotypes. Participatory Design may be informed by this approach to create more inclusive participation spaces. In this paper, we present the initial results from a series of interviews with autism organisation members. These findings explore various considerations regarding 'waiting' within the autism community, be it from the perspective of care work, establishing dialogues, or mutual learning.

CCS Concepts

• **Human-centered computing** → **Human computer interaction (HCI)**; **Accessibility**.

Keywords

Participatory Design, Autism, Neurodiversity, Waiting, Autistic Person-Led Interaction, Mutual Learning, Time, Care Work

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1 Introduction

Participatory Design (PD) has historically focused on supporting the development of technologies, through the engagement with communities that will be affected by them [20]. Particularly when working with marginalised communities, inclusion is an important consideration [22]. Though much focus has been given to setting up such inclusive spaces, approaches used in the past have often

relied on participants' abilities to communicate verbally, participate for long periods of time, possess certain motor abilities, among other aspects that may not always be applicable to all [25].

Participation may, in fact, be experienced in different ways, from verbal to non-verbal communication. This is recurrently acknowledged within autism communities, who have developed strategies to encourage multiple communication approaches and inclusive participation. These strategies promote an adaption of the environment to the needs of the person, rather than imposing a specific way of interaction on someone else [25]. Looking into the work developed within PD alongside the autistic community, strengths-based approaches, dialogues led by autistic people and an understanding of individual wants and needs are central when working towards inclusion [9, 22]. However, often not acknowledged, is the need to respect different temporalities and the waiting needed to build the relationships of trust and care necessary to fuel mutual learning.

In this paper, we position our work in relation to interdisciplinary literature on autism and 'waiting' as a neurodiversity-affirming approach, as well as on the engagement of PD with the autistic community. We describe the methodology established for a series of interviews with autism professionals, rooted in collaborative work with autism organisations, which the participants were members of. Finally, we describe preliminary results of the data analysis, with a particular focus on different experiences of 'waiting' from the perspectives of the participants.

2 Background

2.1 Autism & Waiting as a Neurodiversity-Affirming Approach

Te Reo Hāpai is a Māori glossary which developed strength-based language meant to be applied within the mental health, addiction and disability sectors [11]. In this glossary, the word for autism is Takiwātanga, which translates to "my/his/her own time and space" [11, 19]. Keri Opai, who coined the word, reflected on time spent in dialogue with autistic people and the wisdom gained from embracing meanderings and tangentialities. As a consequence, the word for autism was based on the acknowledgement and understanding of autistic people's "own timing, spacing, pacing and life-rhythm" [12]. This notion highly contrasts with the observed prominence of the



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medical model and deficit-focused approaches meant to "change the individual" rather than consider how to "change the world" [18].

Nowadays, a shift towards the neurodiversity paradigm, driven collectively by neurodivergent self-advocates [1, 18], has placed greater value in the diversity of neurodevelopment, with an understanding that autistic people are experts in, and capable of leading dialogues or communication about, autism [17]. Consequently, interaction approaches that make connections between the respect for different temporalities and the importance of interactions led by autistic people have started emerging. One such case is OWLing.

OWLing was introduced by The Hanen Centre and, as an acronym, stands for 'Observe', 'Wait' and 'Listen' [23]. These different steps are applied as a way to give space for the child (though they may be generalized for other age groups) to lead the interaction, through their own interests [23]. Firstly, the 'Observe' stage allows for parents or carers to gather information about the person's interest, by noticing how they engage with the space, how and why they communicate. Afterwards, the 'Wait' stage encourages parents or carers not to rush, but instead to give time for the person to process a message at their own rhythm and/or communicate in their own way. Finally, the 'Listen' stage gives parents or carers the ability to understand the current forms of communication of the person, noticing their sounds, words, sentences or gestures. When applied to the more generalised context of promoting inclusive participation, the 'Waiting' step takes on a central stage, encouraging and creating opportunity for interaction, while respecting different wanted, or needed, temporalities [5]. Spending time becomes "a form of 'waiting upon' the needs and priorities of another" and takes into account imbalances of power, conceding it through "self-aware waiting" [16].

2.2 Participatory Design with the Autistic Community

Just as is the case with the neurodiversity paradigm, ability-based technology has encouraged to move the focus from disability towards ability of users, within the Human-Computer Interaction field. PD, particularly, has allowed for the active involvement of underrepresented communities, bridging the expertise of these groups to those of the researchers [8]. This has led to more informed and democratised technologies that can better support the strengths of those who'll be affected by them [8, 20, 25]. Despite this, Spiel et al. (2017) state how technologies developed for autistic people regularly fail to encompass the group's perspectives.

Looking into the example of Alternative and Augmentative Communication (AAC) technologies, often used within the autism community, a lack of input from this group can lead to artifacts that negatively impact communication support [14]. Light & McNaughton (2013) have pointed out how background colours, displays and layouts in AAC software have all followed traditional practices, rather than the strengths and needs of their users, which in turn has impacted their accessibility. They assert that improving AAC technologies from a strengths-based perspective may promote improvements in mainstream technologies.

Frauenberger et al. (2016) also explore the unique characteristics of each autistic individual, stating how different interests, strengths

or communication preferences, make "one-size-fits-all technology not viable". This becomes particularly relevant when PD research has heavily centred on autistic children [3], meaning autistic adults, both as a collective, but also individually, may have not had their needs and wants met as easily within available supports and technologies.

Furthermore, despite acknowledging how autistic children with lower support needs have been over-represented in research studies [10], there is still a visible lack of PD research showcasing inclusion, or adapted methodologies, that may extend to autistic people, particularly adults, with higher support needs. This suggests that there is a limit in what can be currently learned from existing PD literature regarding adequate supports and methods for this group. Nevertheless, the few projects that have focused on including autistic people with higher support needs, through PD approaches [24, 25], have highlighted the importance of long-term engagement and knowledge about the individualities of each participant, linking neurodiversity-affirming approaches with more supportive technology and processes.

3 Methods

To investigate and better understand the wants and needs of autistic communities, the main author joined two charities and one special interest group, following and participating in the organisations' activities for six months. During this time, and after having received full Ethics approval from the university Ethics committee, participant observations and interviews were conducted.

3.1 Observational Data

The two charities were each visited twice a week with direct involvement in their activities (e.g. delivery of services), while the special interest group was met once a month. At the end of each visit to the autism organisations, field notes were collected and structured into field reports. These intended to reflect first-person accounts from the first author, which could then contextualise data gathered from interviews. This data focused on the physical environment, inclusive practices, among other aspects linked to everyday activities in these organisations.

3.2 Interviews

Participants in the three organisations (charities and special interest group) were made aware of the desire to conduct interviews which made recruitment informal, often by reaching out individually to organisation workers, either on-site or online. Additionally, recruiting emails were sent out within the organisations, making sure as many individuals as possible were made aware of, and could participate in, the interviews.

The semi-structured interviews allowed for flexibility, with the participants choosing whether they preferred an online or in-person setting. In the case of in-person interviews, these were set in the participant's workplace. Nine interviews took place in-person, while eleven took place online.

Though the interviews focused on the participants' professional experiences, a pre-interview questionnaire gave the choice for the self-identification of participants' other roles within the autistic community (such as autistic person or a family/guardian of an

autistic person), if those were topics that they felt comfortable and interested in exploring, through the conversation.

The interviews lasted around thirty minutes up until one hour. These were recorded, with audio and video data being deleted after transcription. A total of 278 pages of interviews were collected, with an average of 13.9 pages per interview. These have been analysed using thematic analysis [2], with our early findings shared in the paper.

3.2.1 Participants. Twenty participants took part in the interviews, twelve of which were female and eight male. All participants were over eighteen years old and were connected to one of the three aforementioned autism organisations. Therefore, all participants were considered autism professionals/researchers, either through their career or volunteer work. In this paper, their names have been changed for anonymity purposes.

Seven out of the twenty participants self-identified as autistic and one as dyspraxic. Seven out of the twenty participants self-identified as family/guardians of an autistic person and one as a parent of neurodivergent children. Further details are shown in Table 1.

Through this work, mutual learning was established, which allowed for the authors to build a better understanding of the participants as autism professionals and their daily work. Concurrently, the participants developed a stronger sense of the authors' participatory design research and goals. Collectively, a relationship of trust was developed.

4 Findings

Our analysis offers a number of findings with themes focused around autistic people's strengths (e.g.: 'interest in technology for expression', 'closeness to nature') or, for example, limitations in access to health, education and community services (e.g.: 'healthcare limitations and waitlists').

A recurring topic in the analysis of the data was time and respect for different temporalities. In fact, 'waiting' was brought up through a variety of lenses, from the building of relationships and understanding of different needs to practices of care, leading to more inclusive participation.

4.1 Giving and Taking Time to Build Relationships

Developing adequate supports, capable of building upon the wants, needs and strengths of each individual, was shown to rely heavily on long-term commitment. Particularly, as this prolonged engagement is crucial to the building of a rapport informative of a person's interests [16, 21].

"Most work with the participants is based on establishing comfort within the space and trust with the facilitators. This is a year(s)-long process for most of the participants."

Field notes

Furthermore, relationships were deeply nourished, with professionals and autistic adults developing friendships beyond the frame of service-providing. As Natalie detailed:

"I find that once you build this relationship and that and it, it is, it's a friendship that you build with these adults. It's not, it's not an instructor meets service user. It's not a staff meets service user. It's a friendship and a companionship that you build with these people. And when you have built that relationship and that trust, I find that there's no real change, because of the fact that they see it as, 'I'm just going somewhere else with [Natalie], it's just another activity that [Natalie] is going to be there to help me with'."

Natalie, P/R & F/G

It is interesting to reflect how designers may engage in long-term community building, focusing on a better understanding of participants and their lived experiences. Taylor, for example, described how long-term engagement with support groups led to an increase in comfort amongst some individuals to try new forms of participation:

"And we've had people go from not being able to go to things in person and start off by going online and then they actually build up the courage to actually go in person because they build up that relationship with the facilitator and the group among them."

Taylor, P/R, AP & F/G

Long-term engagement could be understood within PD as central to empathetic and knowledgeable relationship building. Consequently, more balanced coexistences could be supported by bonds of trust between individuals, that may open up new possibilities for interaction and expression.

4.2 Mutual Learning from Different Temporalities

'Time' associated to the experiences of autistic people has often been seen through a negative lens, being framed as "a frustration to the family's ability to generate capital and thus social value" [19]. However, "stimming as a queer disruption in time and space", or the joy of suspended time that can come from deep focus, [19] emphasize how different temporalities may enhance mutual learning. Rose, an autism professional, explored this by reflecting on the ability autistic people can have to be in the moment:

"[Autistic people] actually teach you sometimes about being in the moment. And and that they sometimes they will, if they don't like something they'll, they'll go towards that remote and tell you they want to change it. That they, they, kind of, would give you, sort of, teach you to be strong and and, kind of, in a way and, kind of, ask for what you you'd like as well [laughs]. Do you know? Where, kind of that, yeah, to have the confidence to just be who you are."

Rose, P/R

Sabrina also described how children within the full range of neurodiversity may establish mutual learning, building upon each other's strengths:

"The kids will learn from each other. Both ways. And I started then also do the studies to kind of think about, well, what are the wins for the non-autistic children

Table 1: Interview Participants

Name	Gender	Relation to Autism ¹	Organisation	Interview Setting
Alexander	Man	P/R; AP; F/G	Organisation 3	In person
Anita	Woman	P/R	Organisation 1	In person
Arthur	Man	P/R	Organisation 1	In person
Caoimhe	Woman	P/R ² ; AP	Organisation 1	Online
Faustine	Woman	P/R; Dyspraxic and a parent of neurodivergent children	Organisation 2	Online
Felix	Man	P/R	Organisation 2	Online
Ines	Woman	P/R; F/G	Organisation 3	Online
James	Man	P/R; F/G	Organisation 1	In person
Johanna	Woman	P/R	Organisation 1	Online
Joyce	Woman	P/R; F/G	Organisation 3	In person
Kate	Woman	P/R; AP	Organisation 1	In person
Natalie	Woman	P/R; F/G	Organisation 3	In person
Robert	Man	P/R	Organisation 2	Online
Rose	Woman	P/R	Organisation 3	Online
Sabrina	Woman	P/R	Organisation 2	In person
Sarah	Woman	P/R	Organisation 1	In person
Seamus	Man	P/R; AP	Organisation 1	Online
Simon	Man	P/R; AP	Organisation 1	Online
Taylor	Woman	P/R; AP; F/G	Organisation 1	Online
Zoe	Woman	P/R; AP; F/G	Organisation 1	Online

¹ P/R: Professional/Researcher working with autistic people; AP: Autistic Person; F/G: Family/Guardian of an autistic person.

² Professional working at autism organisation but not directly with autistic people

here? You know, what skills are they building? And we looked at all of the, you know, what they're learning about communicating and about different people and was, you know, spoke about empathy. And I think that's kind of not so popular thing to talk about."

Sabrina, P/R

This is particularly relevant, as the inherent favouring of fast interaction, or turn-taking, can become "a primary source of neurotypical power over autistic ways of being", with different forms of communication often being disregarded [15, 19]. In the context of PD, creating moments of pause or space for individuals to express themselves freely, devoid of presumptions, may be beneficial to avoid errors and produce more thoughtful, empathic dialogue [15]. This consideration acknowledges that time is needed to develop concentration and process information. Mutual learning may be possible through the acknowledgement of different temporalities, which are associated with their own strengths. Taking in information and allowing time to process it can also be implemented as a way to extend these learnings and mutual understandings, when designing with communities.

4.3 Balancing Time in Care Work

Notions surrounding time have been greatly explored within the field of care work, particularly in feminist literature. There is an understanding that this type of labour diverges from the idea of clock-time, linear time which has impacted industrial contexts, as well as general social dynamics, placing greater value on production and paid work [6, 13]. Clock-time has been imposed upon many institutional, and other community settings, working with autistic

people. However, routines observed during field work were open-ended, and timings reflected varying individual and community needs, requiring flexible approaches [4, 6, 13]. This goes in line with the concept of process time, which highlights the interdependencies of social relations [6]. These two understandings of time can clash [4], impacting service-providing abilities and leading to staff, parents or guardians to often feel like they are running 'against the clock' or constrained.

"Each day is kind of, it takes on a life of its own because sometimes. If we're short staffed, we can't go to a certain place. But then you have to, you have to, be rearranged or rescheduled. Or that we can't, it can be hard to tell a person that morning if we're going somewhere until we're actually closer to the time, so that we don't disappoint them."

Rose, P/R

"A lot of the participants are set to leave right after the alarm for the end of the session rings. A mismatch of expectations due to pick-up delays can cause some negative impact."

Field notes

Though balancing both clock and process time during care work is a laborious task, an acknowledgement of the importance of waiting was linked with more inclusive spaces [4, 6, 13, 16]. As Palmer, J. et al. (2018) states, "the waiting is not simply a space between actions, nor at the margins of work in the field or community; waiting is at the centre of the work and throughout all of it." [16]. Kate pointed out how during scheduled activities, learnings and independence could still be gained from waiting and giving space:

"I just sort of stood back, and I was like, 'Basically, it's up to you what you do with this time, you know, like, I'm here to facilitate your learning, your mental health'. Blah blah. So yeah, just giving him space and time to work through things himself really, really helped him (...)."

Kate, P/R & AP

In the context of PD, external timings can impose limitations. Predictability and routine, often desired, may not always be achievable. However, adopting flexible approaches based on the understanding of each individual, within these time constraints could be in itself a practice of care.

4.4 Waiting Upon Participation as a Practice of Care

Being open to different temporalities and affirming our own need to, and of, 'wait' can allow for the acknowledgement of all of those involved in the research process, where "waiting becomes part of the rhythm of activity" [16]. Furthermore, through recognising temporalities that may have otherwise been disregarded or suppressed historically, researchers may show care that stems from knowledge and curiosity about those they are working with, refusing their tokenisation [7, 16]. Care for different temporalities takes on a particular relevance in two of the interviewees' statements detailing the disrespect or impositions they have experienced regarding their timings:

"I found there's a difference between people knowing you're autistic and people understand understanding you are autistic are autistic. Because, like, if people know it, they might not understand -stand that, like, I just need a bit more time to understand certain instructions, and won't give me accommodations or even, like, in, like, infantilize me by saying 'Oh, oh, this is how how you make a cup of coffee'. And I'm like 'I know how to make it'. But with people who understand it, like they know, like, they know know what to do."

Caoimhe, P/R & AP

"Change is, can be hard for me to process and I need time. I don't like when it's just like somebody's just like 'We're doing this now' and I'm like, 'Whoa, like, give me time to process'. Or if you ask me a question, I might need time to process it before I can answer".

Taylor, P/R, AP & F/G

In PD settings, paying attention to individual specificities and offering different possibilities for interaction, while taking into account distinct timings is central for inclusive participation. The possibility of choice, adaptability and multimodality can be seen as a result of care for participating communities. Faustine details a poignant example of this, when reflecting on using time to explore different ideas, and then having the ability to bring back structure to the discussion:

"I think that people like having a structure. They also like having the space to go off the path. And that's so interesting that some of them actually really loved

that they had that space. They knew what they were going to be working on-. But one of them, I think she even said this, if I remember rightly, that, you know, she said like, you know, 'I'm a bit more of a grasshopper'. You know, 'I like to jump around. And I love that you let me do that. But then you bring me back'".

Faustine, P/R, dyspraxic person and a parent of neurodivergent children

5 Conclusion

In this paper we have explored 'waiting' as a neurodiversity-affirming practice and current links between the autistic community and Participatory Design. From an initial analysis of interviews and observational notes from field work with members of three different autism organisations, we identified four ways in which 'waiting' came up in discussion about the autism community and may inform work within PD contexts:

Giving and Taking Time to Build Relationships To design with long-term knowledge and understanding of each individual;

Mutual Learning from Different Temporalities To explore different ways of communication and avoid assumptions;

Balancing Time in Care Work To recentre the importance of flexibility in scheduled or structured activities;

Waiting Upon Participation as a Practice of Care To embrace different rhythms and forms of participation, through choice and multimodality.

These results seem to reaffirm the importance of acknowledging different timings, in the development of PD alongside autistic communities. This is further sustained by literature on neurodiversity and approaches led by the autistic community, which emphasise 'wait' as a form of respect for different rhythms and temporalities.

To add to this, the findings reiterate how individual each autistic person and their experiences are, meaning that engaging with approaches based on flexibility and openness allow for more empathic dialogues and, in turn, lead to more understanding coexistences and effective technologies.

It is important to note that, as the interviews were not specifically centred on the topic of 'waiting', additional research would still be important to expand on these results. Equally, it would be relevant to gather broader perspectives from autistic people on how effective and welcome these waiting-based approaches are. Particularly, it would be significant to investigate how these practices used within PD are viewed by groups with higher support needs and/or adults, considering the bias towards collaborating with children and/or individuals with lower support needs in research processes.

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Exploring Authenticity in Participatory Design (APD)

Towards a Framework of Lived Experience & Relational Ethics in Co-Creation

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Abstract

This exploratory paper examines authenticity as both a value and a practice within Participatory Design (PD). It introduces the *Authenticity in Participatory Design (APD) framework* as a reflective and methodological lens to evaluate the depth and quality of participation. Grounded in two decades of PD, rethinking of Universal Design (UD) / Inclusive Design (ID) [1] and social innovation practice, the APD framework integrates four modes of engagement—Design FOR, WITH, BY, and AS People—to explore how participation becomes authentic through lived experience, ethical reflection, and redistribution of power. Drawing on two practice-led projects in dementia care and criminal justice/prison rehabilitation, the paper argues that authenticity is not a procedural guarantee but a relational, affective, and situated achievement. It emerges when participants/people and designers engage with empathy, vulnerability, and mutual accountability of lived experience. Authenticity, in this view, is a dynamic condition that transforms both process and people, positioning PD as a collective practice of learning to live together differently.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design; Human computer interaction (HCI); Empirical studies in HCI.

Keywords

Authenticity in Participatory Design, Lived Experience, Relational Ethics, Co-Design Frameworks, Social Innovation, Design FOR, WITH, BY, AS People

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1 Introduction: Authenticity and the Participatory Design Ethos

Since its origins in 1970s Scandinavia, Participatory Design (PD) has sought to democratise design by sharing power between experts and those affected by design decisions. Over time, however, ‘participation’ has become a ubiquitous - and often diluted-term. Many projects perform inclusion procedurally rather than practising it relationally. Against this backdrop, we aim to offer the concept of authenticity a way to re-centre PD’s ethical foundations.

This paper introduces the Authenticity in Participatory Design (APD) framework, as both a reflective tool and a conceptual map, it reframes the familiar participatory spectrum proposed by Sanders and Stappers (2008) [2] - Design FOR, WITH, and BY People. By adding a fourth orientation, Design AS People, that explicitly addresses the entanglement of identity, embodiment, and lived experience in co-creation. The paper argues that authenticity restores PD’s moral purpose: not only to include people in design, but to design AS people—through relationships that transform everyone involved.

Authenticity here refers to alignment between intention, action, and relationship. Following Taylor (1991), we understand authenticity as co-constructed: a personal voice that remains answerable to others through recognition, dialogue, and ethical commitments [3]. In dialogue with this account, Sherwood (2022) argues that in what she calls a ‘counterfeit’ culture - where authenticity is continually performed and commodified - reclaiming authenticity is less about proving an inner ‘real self’ and more about practices of truthfulness and accountability to what is real, shared, and consequential [4]. To ground these relational claims in lived practice, we also draw on Heidegger’s notion of being-in-the-world (1927), which frames authenticity as an embodied way of living with uncertainty and choosing meaning within concrete situations - rather than an inner feeling or a stable identity [5]. For PD, this means authenticity cannot be guaranteed by methods or checklists; it is achieved in how designers and participants meet one another, acknowledge limits and differences, and remain open to being affected.

The APD framework is a practice-led approach to reflecting on positionality and research practice. It was developed through reflective analysis across social design projects, and here we demonstrate its use through two longitudinal cases (OK Dementia and the Criminal Justice & Prisons Projects), where we held sustained roles as designers, researchers, and facilitators. Our analysis draws on project documentation (field notes, workshop materials, artefacts, photographs, and prior publications) alongside a year-long

Table 1: APD orientations as a non-linear, reflective heuristic

Authenticity in PD (APD) Framework – mode	Purpose and role of authenticity	Representation	Intensity of community engagement	Role of Designers
Design FOR People	Ethics of intention – can be authentic when designers are transparent about interpretive distance, make assumptions visible, and take responsibility for consequences.	Most conventional mode of design practice (representation by designers).	LOW – engagement is primarily consultative. Designers work mainly through research, interpretation, and representation (e.g., interviews, observations), and remain accountable for how others are portrayed.	Designers act on behalf of others, interpreting needs through research and expertise.
Design WITH People	Reciprocity and co-learning – authenticity arises through honest exchange, shared sense-making, and negotiated direction.	Transition from representation to collaboration (co-design in practice).	MEDIUM – designers and participants collaborate through workshops and iteration. Participants influence decisions, while designers often retain responsibility for synthesis and delivery (varies by context).	Designers and participants work side by side, sharing insights and negotiating direction.
Design BY People	Agency and autonomy – authenticity relates to the degree of participant control over goals, criteria, and outcomes, and the conditions that sustain that agency.	Shift of authorship toward participants (community-led design).	HIGH – participants set goals and criteria and lead much of the design work. Designers support with facilitation, mentoring, translation, and technical expertise as needed.	Designers act as facilitators, mentors, translators, or resource providers rather than primary creators.
Design AS People (NEW)	Embodiment, identity, and transformation – authenticity can surface when collaboration changes how people understand themselves and their relationships, without collapsing difference.	Most reflexive and transformative orientation (situated contribution).	VERY HIGH – designers may work from within the issue community through lived experience and/or long-term, accountable involvement. The community’s voice remains dominant; designers contribute as allies or members while explicitly maintaining ethical and personal boundaries.	Designers and participants are co-constituted through the design process. Roles can become interwoven through sustained collaboration, while difference and boundaries are respected. Designing becomes a form of identity work and ‘relational becoming’.

cycle of joint reflection. We use the APD modes as a sensitising lens to examine when participation was experienced as more or less authentic, with particular attention to how roles, power, and responsibilities shifted over time.

2 The APD framework: Design FOR, WITH, BY, and AS people

Whereas Sanders and Stappers describe FOR/WITH/BY as a continuum of participation, the APD framework treats these as orientations that can overlap, recur, and shift over time. It is not a maturity ladder (more participation is not automatically ‘better’ or more authentic). Instead, it helps designers reflect on intention, reciprocity,

agency, and embodiment, and on how power and responsibility are redistributed. In this sense, the framework functions less as a taxonomy and more as a compass for navigating authenticity in situated relationships (see Table 1).

2.1 Design FOR People: Ethics of Intention

Design FOR People remains indispensable in many contexts - policy, architecture, or healthcare - where participation may be constrained by safety or scale. Yet its authenticity depends on reflexive intention. Ehn (2008) [6] argued that even within expert-led projects, designers can democratise knowledge by exposing their choices to scrutiny. In the APD framework, authenticity within ‘Design For’



Figure 1: Design FOR/WITH/BY/AS PEOPLE ©Yanki Lee 2026

is not measured by inclusion but by accountability: whether designers acknowledge power asymmetries and engage ethically with the people they claim to represent. It recognises that some design work must be done for but insists that it be done *with awareness*.

2.2 Design WITH People: Reciprocity and Co-Learning

Design WITH People depends on the willingness of designers to listen and adapt, of participants to engage actively in shaping outcomes and an understanding that this reciprocity is never perfectly balanced. Institutional, cultural, and temporal constraints often shape identities and also whose voices are heard. Authenticity in this mode depends on the honesty of the encounter: acknowledging difference rather than pretending equality. Following Light and Akama (2014) [7], authentic participation is relational, not procedural - it lives in the *quality of attention* exchanged between people. Practically, 'Design WITH' requires scaffolding spaces for dialogue, improvisation, and iterative sense-making. Its authenticity is most visible when participants begin to influence design decisions meaningfully and when uncertainty is treated not as a failure but as evidence of shared ownership.

2.3 Design BY People: Agency and Autonomy

Design BY People aligns with Manzini's (2015) [8] conception of social innovation by communities, where design's role is to support local capacities rather than deliver external solutions. Authentic 'Design BY' practices often emerge in grassroots or activist contexts where communities take collective ownership of design processes. Yet this autonomy is fragile. Without institutional support, projects risk fading once funding ends or leadership changes. Authenticity thus depends not only on empowerment but on context and sustainability - whether systems of support enable participants' continued agency after the designer's departure.

2.4 Design AS People: Embodiment, Identity, and Transformation

Design AS People resonates with Latour's (2005) [9] actor-network theory and Puig de la Bellacasa's (2017) [10] ethics of care, which view design as a distributed practice of world-making among humans and non-humans. To design AS people is to design with awareness of one's interdependence - with other bodies, materials, systems, and stories, and not to speak without them or try to take their role. A clear example of this was the 2015 USA case of Rachel Dolezal¹ who raised controversy, when she as a white woman presented herself as black to lead a NAACP chapter, sparking widespread disgust and debate about race, over-identification and unethical and undemocratic cultural appropriation. Authentic participation here is not merely collaborative but is performative, but ethically situated, and democratically negotiated regarding how participants understand themselves and their identity and place within the collective group.

3 Authenticity as Movement Across Modes

We propose that the APD framework helps conceptualise authenticity as movement between these orientations. Most PD projects traverse multiple modes: they may begin FOR communities (e.g., policy- or institution-led), evolve WITH them through dialogue, create conditions for communities to lead BY their own design, and sometimes culminate in moments of AS - shared reflection, solidarity, or identity shift. Importantly, these transitions are rarely clean or linear. Projects often oscillate, overlap modes, or move 'backwards' due to access, risk, organisational constraints, and changing capacities of participants. Authenticity therefore emerges less at fixed endpoints and more in the messy transitions: in how roles shift, how tensions are negotiated, and how relationships are sustained - or repaired - over time. In practice, this movement can be visualised as a cycle (figure 1) rather than a ladder as Sanders and Stappers (2014) [11] explained, echoing the iterative nature of action research. Each passage between modes demands different ethical capacities - humility when designing FOR; affective as well as cognitive empathy when designing WITH, trust when designing BY, and the courage to do something about the pain of others when designing AS. The APD framework helps practitioners trace how authenticity ebbs and flows throughout participation, offering a shared language for discussing what it means to design genuinely with others.

Synthesising these views, authenticity is situated, relational, and affective - a quality of co-existence rather than a procedural benchmark. It invites PD to move beyond inclusion metrics toward reflective, caring, and context-aware collaboration. The APD framework represents both a theoretical model and a methodological artefact: a synthesis of action, reflection, and co-creation. It provides PD researchers and practitioners with a structure for evaluating identity politics or whether participation occurred by preferred people,

¹Nkechi Amare Diallo (born Rachel Anne Dolezal;[fn1] November 12, 1977) is an American activist, author, and former college instructor known for presenting herself as a black woman despite being born to white parents. Dolezal was president of the NAACP chapter in Spokane, Washington from 2014 until June 2015, when she resigned in the midst of controversy over her racial identity. https://en.wikipedia.org/wiki/Rachel_Dolezal



Figure 2: OK Dementia's progression across APD stages: from Stage 1 (Design FOR the public) to Stage 2 (collaborating WITH professionals), through immersion AS patients, and toward Stage 4 (enabling Design BY patients and carers grounded in lived experience). ©Enable Foundation/Yanki Lee 2026.

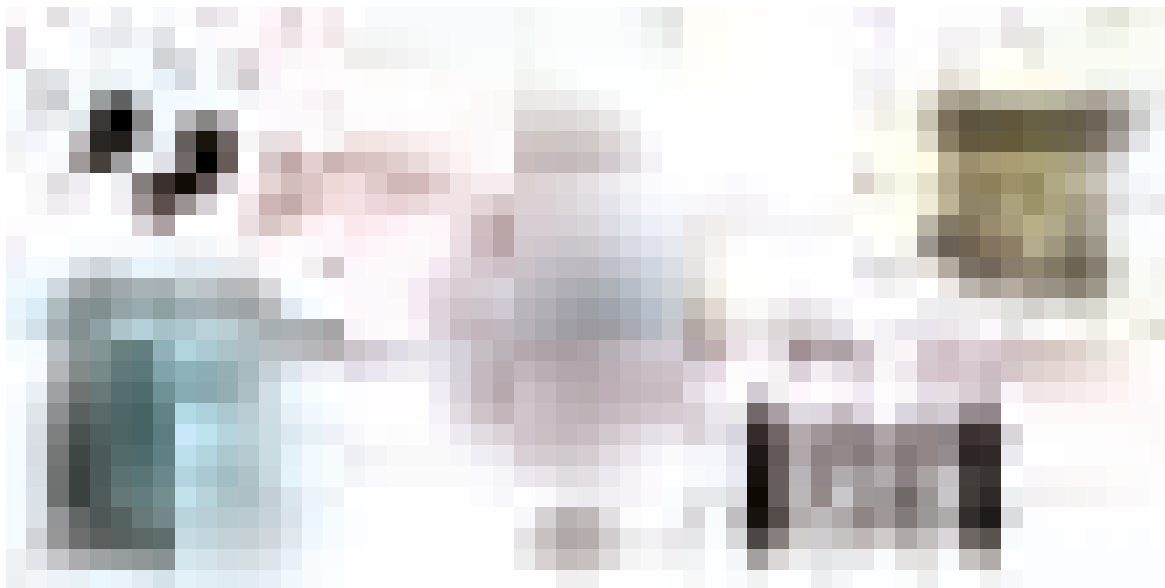


Figure 3: Criminal Justice and Prisons Projects progression across APD stages: from Stage 1 (Design FOR designers) to Stage 2 (Design WITH people in prison), and toward Stage 3 (Design BY prisoners, led by a prisoner-turned-designer) and Stage 4 (Design AS). ©Design Against Crime Research Lab, Central saint martins, University of the Arts / Lorraine Gamman 2026.

but how participation felt, how it shifted relationships, and *what* ethical transformations it produced.

4 Illustrative cases: Dementia and Prison Design

The APD framework gains meaning only when tested in lived practice. Two longitudinal projects, both starting from 2015 - *OK Dementia* and what we are calling the *Criminal Justice & Prisons*

Projects - serve here as exemplary terrains for examining how authenticity unfolds across complex, ethically charged contexts. Both case studies evolved over several years (or draw on a longer history) through partnerships between designers, community organisations, and participants whose lives were directly shaped by the issues at stake. Each case demonstrates that authenticity is not an abstract virtue but a situated negotiation, constantly re-made through time, emotion, and institutional constraint

4.1 OK Dementia: Living with dementia as lived-experience to inspire new everyday practice

The *OK Dementia* [12] began in 2015 as part of a broader initiative to raise public awareness about dementia through design. In Figure 2, there is the initial phase aligned with Design FOR People (medical and social experts): designers created empathy artefacts - such as the *Dementia Shirt*, *Confusion Apron*, and *Sensory Goggles* - that mimicked disorientation and sensory loss. Showcased in galleries and community centres, these artefacts successfully provoked discussion but also revealed ethical tensions. Visitors often left with pity rather than understanding; carers questioned whether such simulations truly honoured the lived experience of dementia.

Through reflective dialogue, the team recognised that authenticity could not be achieved through representation alone. Empathy tools, though well-intentioned, risked aestheticizing vulnerability. The next phase therefore shifted toward Design WITH People. Co-design workshops invited dementia consultants, carers, relatives, and occupational therapists, and - where appropriate - people living with dementia in early stages who wished and were able to participate. In the account presented here, direct participation by people with dementia was necessarily limited and uneven across activities, highlighting that designing 'AS' is not always possible when communication and autonomy are reduced. The design space itself transformed - from exhibition to living room, from spectacle to conversation. Participants contributed their own sensory and narrative artefacts: objects of memory, gestures of care, and routines of everyday life.

Reflecting through the APD lens, *OK Dementia* demonstrates a full cycle of authenticity: beginning FOR with simulation, moving with through dialogue, enabling BY via participant authorship, and achieving moments of AS through embodied empathy for all. Authentic participation here became a process of mutual unlearning - abandoning the illusion of 'understanding dementia' and instead embracing its ambiguity as creative ground.

4.2 Criminal Justice & Prisons Projects – Reinterpreting Social Justice Through Co-Designing

Where *OK Dementia* unfolded in domestic and community contexts, the *Criminal Justice & Prisons Projects* (Since 2015) [13] confronted one of the most restricted and politicised design environments: the penal system. Initiated in collaboration with correctional institutions and NGOs supporting re-entry, the programme sought to explore how design could improve well-being and dignity within carceral settings.

In Figure 3, it shows the early-stage engagement that resembled Design FOR People: designers spoke to many people (including prisoners) in early 2000 in order to better understand bag theft, how perpetrator techniques emerged to try to thwart this crime through design of café chairs that lead to the misuse and abuse of bags left on such chairs. It took 15 years (and a letter to the prime minister) for the design team to get access to prison, involve prisoners, and create work that went beyond just commenting on how crime occurs. The project went on to generate and co-design their own solutions against crime. The *Makeright Project* (2015–19) saw prisoners co-designing bags to protect people from crime (Design WITH People). Later at another prison (on cell furniture project 2018–2022) the design research team was invited in to study spatial layouts of cells and daily routines of prisoners to produce safer cell furniture. Early prototypes of ergonomic furniture, redesigned cell storage etc - found students responding to official briefs we gave them but working outside of prison offering little agency to incarcerated people themselves (Design FOR people). Authenticity, in this phase of furniture design, remained aspirational; participation of prisoners constrained by access.

Gradually, through informal interactions and trust-building, the design research team managed to gain direct access to prisoners, shifting our focus again towards Design WITH People. Small creative workshops were held in education units in prison where inmates as co-creators explored design through drawing, model-making, and storytelling. These sessions were specific about prisoners' needs from cell furniture but often became emotional, revealing memories of homes, families, and futures imagined beyond incarceration. Authenticity manifested in moments of shared vulnerability: when participants articulated their experiences without fear of institutional judgement, and when designers acknowledged their own discomfort and partial understanding, and development of mutual understanding. This meant later together the whole team generated designs (including the Flip chair) delivered as co-design (design BY) prisoners.

A further transformation occurred when a former inmate was invited to join the facilitation team after release, and a PhD student with lived experience of prison was funded to work alongside the team as a Research Fellow. Their lived experience as '*credible messengers*²' [14] enabled further development of the Design BY People who had been in or were in collaborating further with inmates in prison, extending the bag and furniture focus to include digital storytelling by prisoners of their experiences. Here participatory re-imagining of futures after prison focused on dignity and connection. Authenticity here meant redistributed authorship: the design narrative was no longer written about prisoners but by them.

Here, the programme cultivated instances of Design AS People. One facilitator described engaging with design as 'a language to translate what we felt inside into something constructive.' This expression captures the performative dimension of authenticity: through creative action, prisoners re-defined themselves not as offenders but as designers, researchers and subsequently mentors. The design research team also began to work in an 'AS' orientation

²Credible messengers are individuals who possess authentic lived experience and social legitimacy within a particular community, enabling them to effectively engage, influence, and support others through trust-based relationships—recognized especially in contexts such as violence reduction, youth mentoring, and criminal justice reform.

- seeking alignment through accountable, sustained collaboration, while recognising difference - co-creating the design of objects (cell furniture using expert skills required to finalize prototyping). These shifts, however, remained precarious. Institutional hierarchies could easily reverse progress; funding cycles for the roles were short and public stigma persistent. Authenticity thus appeared as momentary coherence within an otherwise fragmented system - a fragile but transformative alignment of trust, voice, and purpose. Through the APD lens, the Criminal Justice & Prisons Projects exposes the structural limits of participatory authenticity. Whereas OK Dementia operated in relatively open community spaces, prison design demanded continuous negotiation with authority.

Authenticity often had to be smuggled in through micro-encounters: a design conversation that turned into mutual recognition, a workshop where rules briefly loosened or where the credible messengers help establish trust that brought forward deeper discussion. These moments mattered precisely because they were temporary. They exemplify what Haraway (1988) [15] might call '*situated authenticity*' - truth-saying that exists within, not outside, conditions of power.

4.3 Comparative Reflection

Together, these cases show that authenticity in PD cannot be standardised or guaranteed. It depends on the interplay between structural possibility and relational care. OK Dementia demonstrates authenticity as emergent solidarity - how everyday acts of making and storytelling can build communities of empathy. The Criminal Justice & Prisons Projects illustrates authenticity as resistance within constraint - how even brief encounters of trust can challenge oppressive systems.

Across both, authenticity is inseparable from temporality: it takes time to emerge, yet can disappear instantly. It is produced through affect - through laughter, hesitation, anger, and gratitude - and through the courage to stay with complexity. These projects, viewed through the APD framework, affirm that design's most authentic moments occur not at the polished end of a project but in the messy, relational middle where power, care, and creativity collide.

5 Discussion: What Makes Participation Authentic?

Authenticity in Participatory Design (APD) is not a property of tools or outcomes; it is a relational quality that emerges when people co-create meaning with openness and care. It requires recognising identity differences and power relations, while still finding workable ways to act together. Analysis of the two cases suggests four interlinked conditions that help participation feel genuine:

Relational openness sets the tone. Authenticity begins when designers and participants collaborate without certainty, allowing emotion, disagreement, and learning to shape direction and enabling 'relational becoming' (Marttila et al., 2025) [16]. In *OK Dementia*, this shift emerged when designers stopped framing dementia as a problem and listened more deeply to lived experience;

in the *Criminal Justice & Prisons Projects*, when inmates were recognised as knowledge-holders and co-creators rather than reduced to the stigma of criminals.

Distributed authorship shares ownership. Authenticity grows as participants gain real influence over ideas and narratives, and see their perspectives carried through into outcomes. It replaces singular designer authority with shared interpretation and responsibility.

Situated power awareness keeps hierarchy visible. Participation never fully escapes asymmetries of role, status, or access. Authenticity depends on noticing and negotiating these dynamics - clarifying who speaks for whom and how decisions are made.

Embodied vulnerability and reflection sustain trust. Participation feels genuine when people risk uncertainty, acknowledge limits, and reflect together on what felt authentic - or not. This ongoing attention keeps ethical awareness active and relationships resilient over time.

Together these conditions form an ecology of authenticity. They remind us that participation is most real not when it is perfectly managed, but when it remains responsive to tension and transformation - when design becomes a site for mutual becoming rather than managed inclusion.

6 Conclusion

Authenticity in Participatory Design (APD) is not a fixed achievement but a living relationship - a continual negotiation of trust, care, and meaning. The APD framework reframes participation as a relational spectrum - Design FOR, WITH, BY, and AS People - showing how ethical depth shifts with agency and perspective. Across the action-research cycles and case studies, authenticity was what moved participation from inclusion toward co-existence. It surfaced in dialogue, vulnerability, and shared authorship rather than in predetermined outcomes, reminding us that design's power lies less in artefacts or policies than in reconfiguring relationships between people, institutions, and the worlds they inhabit.

For practitioners, APD offers a practical way to work with complexity without reducing it. It can help to: (A) map which orientations are active and make voice and influence visible; (B) support transitions through regular check-ins on roles, consent, authorship, and care; (C) strengthen participant agency through shared criteria for success and access to resources; and (D) hold ethical boundaries when designing 'AS' by naming limits, avoiding over-identification, and staying accountable to the community. Used this way, APD treats artefacts, services, and policies as means for reshaping relationships with dignity and mutual responsibility.

Ultimately, authenticity restores PD's ethical and philosophical core: designing AS people—not above or FOR others, but WITH and through (BY) them. When participation risks becoming instrumental, authenticity renews PD's promise as relational ethics, collective learning, and shared becoming. This requires ethical reckoning and accountability: a willingness to surface assumptions, name asymmetries, and take responsibility for what design sets in motion. Authenticity cannot be certified in advance; it is the lived, relational outcome of that ongoing accounting - felt in how people meet, what they carry together, and what they are willing to change.

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Design Probes in Practice: Evolving Participatory Methods with Wheelchair Users

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Abstract

People who use wheelchairs face daily mobility and accessibility challenges that need to be considered when designing assistive technologies. Since these barriers make it difficult for them to participate in traditional design workshops, we used design probes to engage them in conversations about their everyday lives, in their homes. We employed a mixed-method approach, combining exploratory interviews, design probes, and post-probe conversations to capture daily experiences, environmental challenges, and emotional connections to their wheelchairs. Probes are regarded as a valuable participatory design tool for gathering cultural and personal insights. However, we found that when designing probe activities based on our assumptions about what was meaningful and appropriate for wheelchair end-users, the distance between them and us increased. Therefore, we recommend that assistive technology designers co-create probe kits *with* marginalized people rather than *for* them to ensure successful design outcomes.

CCS Concepts

• **Human-centered computing** → **Field studies; Empirical studies in HCI.**

ACM Reference Format:

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1 Introduction

Like everyone, people who use wheelchairs aspire to a high quality of life, but limited mobility and environmental barriers are known daily challenges [10]. As assistive technology designers, we need to listen and collaborate with end-users when developing products and services for them. However, their mobility challenges can make it difficult to attend participatory design workshops scheduled at specific times and physical locations. We therefore explored alternative, respectful ways to involve people using wheelchairs in the design process.

People with disabilities are often described as “one of the most marginalized groups in Western societies” [1], although this is not how they themselves typically define their identity. In 2022 an estimated 5.5 million people in Australia were living with disability [2] and 18.4% were using a mobility aid such as a walking stick or wheelchair [2]. Although end-user involvement is essential in assistive technology design, research on the lived experience of people using wheelchairs is limited.

We focus on understanding the world of people who use wheelchairs, how they connect with their wheelchair and how they perceive these devices as part of their interaction with the world. Our human-led approach engaged wheelchair users in thinking about how they would improve that experience. They were also involved in innovating wheelchair designs that would help them to better navigate their everyday lives and environments.

We contribute to new knowledge of the lived experience of wheelchair use through exploratory interviews, design probes, and post-probe conversations with a small group of wheelchair users. Design probes were chosen as appropriate for designing assistive technologies together with this group, because probes encourage participants to complete design-related activities independently, at their own pace and in their own homes. Design probes are exploratory and give insight into the everyday lives of wheelchair users while giving them agency to share as little or as much as they want about their situation. In this way, probes, being both accessible and inclusive, effectively facilitated participation in the design process for people who experience mobility conditions.

Findings from the design probes confirm that we were able to surface new understandings about the lived experience of wheelchair users. However, not all participants responded well to the probe kit activities. Despite efforts by designers to be sensitive, some scrapbook activities received negative feedback or were left unattempted. One participant even crossed out activities they did not like. The fact that two participants did not return the probe kit and four were unavailable for post-probe conversations indicates a problem.

This led us to reflect on how the design probe activities could be improved. In light of conversations with people who use wheelchairs, we realised we should have involved them in the design of activities and imagery for the probe kit right from the beginning, ensuring that these are relevant and meaningful to them. Through these reflections, we argue that working alongside people who have been historically excluded from design processes, it is essential to take a participatory approach by co-creating the design probe kits with them. The lived experience of participants offers critical insights that differ from our own as designers, and we must not assume that we know what will work best at any stage of the participatory design process without their direct and early involvement.

2 Literature review

2.1 Design Probes

Design probes [14], originally cultural probes [8], are a qualitative research method that centres the end-user in the design of a product or service. Design probes are intentionally created to be open to interpretation, allowing participants to use various media to express their ideas, opinions, and stories, thereby building a rich picture of their lives and experiences [13]. Design probes can include a range of activities such as diaries, camera studies, mapping exercises, collaging, and open questions [13]. Probes are typically “sent out” to the end-user of a product. They are physical kits that participants take into their personal spaces to “probe” for information about their lives. This makes them useful for co-creating with potential end-users, eliciting rich responses and perceptions that designers can use to inspire prototype development [18].

Design probes address the challenge of understanding people in their own settings, providing reflections on experiences, feelings, attitudes, and actions in context. Probes provoke inspiration, gather information, and encourage participation. They promote dialogue between end-user and designer, giving insight into cultural and personal aspects of people’s lives that contribute to their overall experiences of products [13]. Probes can gather information in sensitive contexts [15] to help understand the needs of differently abled people in their everyday lives, facilitating a greater engagement between the end-user and designer.

Probes capture data/experiences that are relevant to the design process, often missed because they are strongly tied to the person’s time and space, and hence their current feelings, needs and desires. Many studies recognise the benefits of using design probes [4, 5, 7–9, 13, 19]. Christoforou and Müller [5] found that materials produced by probes were useful in providing subjective accounts of participants’ day-to-day unobserved lives. Wherton et al. [19] used probes in a larger ethnographic study to understand the needs and experiences of older adults. They found that probes allowed participants to engage in activities independently, encouraging

open-ended responses that were evocative in nature and provided researchers and designers with a richer understanding of their experiences, capturing unique aspects of the participants’ lived experiences to inform the design of assistive technologies.

Concerns have been raised by Sanders and Stappers [18] whether probes are really participatory, as they are created by designers, sent to end-users with little or no guidance, and outcomes are then returned and used to inspire design solutions *for* end-users, rather *with* them. However, our study revealed that design probes can provide an opportunity for marginalized people to participate in the “fuzzy front end” [17] of the design process by being more accessible and inclusive.

2.2 Understanding sensitivities of marginalized people in the design process

Design probes offer an opportunity for marginalized people to participate in the design process, and yet the design of the probe kit needs to account for sensitivities of the end-users. For example, Leitão [12] criticises “designers, armed with toolkits, parachute[ing] into local communities” (p.257), claiming that this approach tends to ignore the knowledge of existing local and innovative designers. Leitão [12] advocates for a desire-based design process that is open-ended and meets the diverse needs of marginalized end-users.

In designing probes, Mattelmäki [13] found they were less effective when they included activities reflecting the designer’s personal styles, resulting in limited uptake by participants. Similarly, Coleman et al. [6] found that designers often design for themselves and people like them, creating an increasing gap between who they are and who they are designing for. However, when young designers worked closely with disabled individuals, they gained a deeper understanding of their frustrations and desires, increasing their ability to address the diverse needs of marginalized people [6].

3 Method

We used an explorative mixed-method design to capture the rich lived experiences of people who use wheelchairs. This included exploratory interviews, design probes and post-probe conversations. Key questions included: How do they interact with their wheelchairs? What challenges are they facing? How do they think about their wheelchairs with respect to themselves? How do they think the wheelchair enables them, and how it does not? We wanted to understand how the physical environment affected their mobility, independence, and quality of life. We also wanted to understand their emotional engagement since their wheelchairs are conceivably part of their identity and therefore need to be desirable and/or appealing.

With an aim to be accessible and inclusive, we conducted exploratory interviews online, inviting wheelchair users to participate in a design probe study to share their experiences, insights and feelings in relation to using their wheelchairs over a period of three weeks, from their own homes. The probe offered a series of activities using different communication methods: answering question prompts, handwritten diary entries, storytelling, sketches, photos, or collage.

Table 1: Participant Characteristics

Participant	Gender	Age	Highest education	Working status	Household	Nature of disability	City locale
Anna	F	29	TAFE	Other	2	Did not say	Did not say
Daphne	F	54	Postgrad	Other	1	Myalgic encephalomyelitis (ME/CFS)	Urban
George	M	68	Highschool	Carer/ Pensioner	2	Polio. Uses a powerchair for mobility	Suburban
Penny	F	50	Undergrad	Employed for wages	2	Spinal Cord Injury - Paraplegia	Inner city
Peter	M	46	Postgrad	Employed for wages	4	Paraplegic	Inner city
Sarah	F	49	Postgrad	Out of work but not currently looking	3	Progressive Neurological Condition of genetic origin	Suburban close to city

Each participant was given a gift voucher in appreciation of their participation, regardless of whether they completed all research activities. The research project was approved by Swinburne’s Human Research Ethics Committee, Ref: 20225989-10800.

3.1 Participants

Six people, living in different home situations, who use wheelchairs daily, volunteered for the study (Table 1). They were invited via targeted advertising and through existing social connections and groups. The inclusion criteria was anyone over 18 who required a wheelchair for everyday mobility and was able to participate in using the probe kit. Prior to data collection, all participants received an information statement, consent forms and a background demographic questionnaire. All participants gave written or oral consent.

3.2 Procedure

3.2.1 Semi-structured exploratory interviews. Before the probe kits were sent out, the six participants were interviewed online using Teams by two researchers to get first insights into their daily habits. At the start, we explained the purpose of the research. Questions asked about ordinary daily activities, special outings or activities, social networks, and assistive technology use (detail in Appendix at end). Participants were asked to report on perceptions and problematic situations they had faced regarding their wheelchair use. The discussions lasted between 40 and 75 mins and were audio recorded, transcribed and checked for accuracy.

3.2.2 Probe distribution and check-in. After the exploratory interview, the design probes were sent to the homes of the six participants, including instructions on how to engage with the material, over a 3-week period. They were free to do the activities in their own time. They could complete as many or as few of the tasks as they liked. One week after receiving the probe kit, participants were contacted and given the opportunity to ask questions about the kit. Only four probe kits were returned.

**Figure 1: Design Probe Kit**

3.2.3 Design probes. The design probe kit contained a welcome card, a scrapbook, visual diary photographic instructions, a pen and a pre-paid return envelope (see Figure 1). The probe was returned by four participants. The scrapbook had activity pages which were inspired by the Wherton et al. [19] study, aiming to provide a space where people living with wheelchairs could explore and write, show or draw what they found important. The scrapbook, welcome card, and photographic diary instructions were designed by Junior Designers under the supervision of the researchers. The designers were tasked with making the scrapbook activity pages in a way that would be sensitive to the wheelchair users.

Scrapbook. The scrapbook contained the following activity pages:

- **Body silhouette:** Five activities used the silhouette of a lying or standing gender neutral body shape (shown in Figure 4). Participants were encouraged to indicate on these figures where they experience discomfort or pain when using their wheelchairs. We also asked participants to draw the places, people, and objects they found meaningful in relation to themselves.

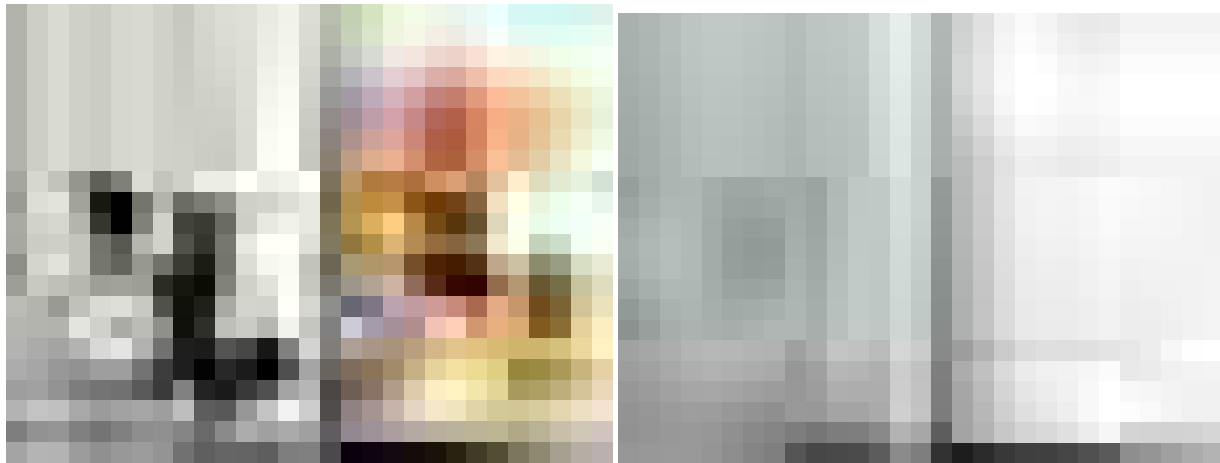


Figure 2: Drawing, Collage and Map Activity pages from the Scrapbook

- **Maps:** Participants were encouraged to draw what home looks like to them (see Figure 2, right). This activity gave participants the opportunity to reflect on features and objects in their home that impacted their daily lives. They were asked to indicate places they had travelled to in their wheelchair on a world map and to highlight where they would like to go in the future and why.
- **List:** We asked people to list what felt empowering, what they disliked and what felt restrictive to them in relation to using their wheelchair. We included this activity to get a better understanding of their positive and negative experiences using their wheelchair.
- **Wishes:** Participants were prompted to express three wishes on what would improve and change their lives and what they could not live without.
- **Diary:** The final section of the scrapbook provided an opportunity for diary entries. Inspired by [16], participants were asked to respond to questions such as “What did you like about this morning/afternoon/evening?” and “How could it have been better?”. A set of emojis invited them to record their mood for each day.
- **Drawings/Collage:** Participants were invited to draw their ideal wheelchair and create a mood collage by cutting out coloured shapes, patterns, using key words like inspiration, creativity, freedom, calm and journey (see Figure 2, left). We included these activities to gain insights into speculative wheelchair designs and provide a creative outlet.

Visual diary. Participants were encouraged to take at least one photograph a day to show important objects or represent their emotions or feelings, providing them with the opportunity to share meaningful visual information. We provided prompts like “Your favourite spot at home”, “What challenge do you face daily?” and “What fills your time?”. Participants were asked to record the date of the photograph and why they took it in the written diary section of the scrapbook.

3.2.4 Unstructured post-probe conversations. Two wheelchair users agreed to the online post-probe conversations. They talked with two researchers about the photographs and the scrapbook. The aim of these conversations was to understand the participants’ experience with the design probe and the outcomes produced. These conversations lasted between 40 and 60 mins and were audio recorded, transcribed and checked for accuracy.

4 Analysis and Findings

Three researchers studied the visual and written content of the probes, familiarised themselves with the submitted photographs and read the transcripts. One researcher coded the transcript data using an inductive approach as described in reflexive thematic analysis [3]. The researcher collated and grouped the data into initial sub-themes, which were discussed and reviewed with the two other researchers. Through iterative code development, we identified four themes that represented the dataset. These themes, described below, were discussed by all group members to confirm they covered the most relevant issues.

4.1 Mutual Care and Contribution within Disability Networks

People with disabilities are not only recipients of care but are active contributors to the well-being of others, supporting family members, mentoring peers, advocating for systemic change, and engaging in paid or volunteer roles that benefit the disability community. This challenges stereotypes of dependency by highlighting reciprocal care, expertise sharing, and leadership in everyday life, advocacy spaces, and professional contexts. In the exploratory interview, George, a pensioner and carer, described his morning routine, “In the mornings, I get dressed on the bed, slide transfer to the chair, go out and make a coffee, then wake up Blake [grandson who has autism, diabetes, and epilepsy] and help him get ready for the day before his support worker arrives.” Sarah and George discussed how their personal experiences with disability informed their creative expression and advocacy, enabling them to communicate and reshape perceptions of disability. Sarah explained, “Hence

I'm doing some artwork around [disability], which has become quite cathartic for me—a sort of form of narrative art that informs other people of what this experience can be like." George expressed, "I started getting more involved in disability rights advocacy. My approach wasn't about lobbying—I was much more direct. I liked to take things on face-to-face, and I wasn't afraid to speak up about how people with disabilities were being treated." Opposing the one-way caregiver/care-recipient paradigm, Anna writes in the design probes that her life goal is to "become an occupational therapist". Penny also describes how gratifying it is to be an active part of a care network: "As part of my job, [I visit] a group of people with spinal cord injuries... I organise network meetings which include lunches, activities, sports, and enabling people to connect, share experiences and provide peer support to each other."

4.2 The Chair-as-Body and its Influence on Autonomy

The wheelchair is experienced as an extension of the body, shaping movement, stability, and sensory perception, while directly influencing autonomy and decision-making in daily life. The interplay between physical embodiment (balance, reach, fatigue, proprioception) and social agency (where one can go, what one can do independently) reveals the chair's role as both a liberating and limiting presence, depending on fit, environment, and context (for example, Figure 4). Anna explained how her wheelchair restricted her spontaneity: "I couldn't even just decide to have McDonald's for lunch and go out and get McDonald's without anyone else knowing about it." In the probes, she also expressed her desire to use her wheelchair independently and explained how she was excluded from family activities because her wheelchair would not fit into the car or even the kitchen. Similarly, Daphne shared that "sometimes I park somewhere and then can't actually get out because the curbs are too steep or there's no accessible route." Penny disliked that the wheelchair is a "symbol of disability" and refers to pushing her wheelchair as "walking". However, using a wheelchair can also provide unique opportunities. Peter explained that "wheelchairs have always been a bit of an enabling device for me... the wheelchair enabled me to go to the Paralympics, but I wouldn't have gone if I didn't already have an interest in basketball." Penny also liked about her wheelchair that it "goes fast downhill!!!"

4.3 Customisation, Hacking, and Personalisation

People using wheelchairs adapt, modify, and personalise their chairs to improve usability, comfort, and safety, while also expressing identity and style. These interventions range from low-tech "micro-hacks" (extra bags, reflectors, altered grips) to aesthetic choices (colourways, decorations) and more substantial modifications (free-wheels, off-road tyres). The process of customisation is both practical and symbolic, a means of reclaiming control over design that often defaults to medicalised, standardised forms. Imagining their ideal wheelchair was one of the activities (see Figure 3).

Sarah is very happy with her wheelchair and likes that it is "[fancy and]shiny—green spokes" and "very narrow, custom fitted—fits like a glove". She explained "When I chose the colour, I was like, I'm really gonna get a yellow wheelchair, because you



Figure 3: Anna's Ideal Wheelchair

can't be sad in a yellow wheelchair." She also added decoration "It's got a little keychain hanging off it, which is a little superhero—like Wonder Woman or something."

George described his wheelchair, "This thing is so personalised it's ridiculous...hooks that mums use on prams—about six of them, all around the wheelchair. I've got a bit of bar I tie in to carry another reach tool, a spot down underneath where I strap in my umbrella with an elastic jockey strap." Peter added a LapStacker to his wheelchair, "a retractable strap that you pull out over your lap so you can stretch it on and carry things, and they won't fall off while you're pushing."

4.4 Beyond the Wheelchair: Environmental and Structural Barriers

Barriers and enablers often arise not from the wheelchair itself but from the surrounding built, social, and policy environments. Accessibility is shaped by infrastructure (ramps, thresholds, transport), institutional arrangements (funding schemes, event seating policies), and socio-political attitudes toward disability. These factors determine the degree to which mobility devices can be fully



Figure 4: Anna's experience is shared in the "How does it feel?" activity in Scrapbook

effective and highlight the systemic work needed beyond individual equipment provision.

Everyday activities, such as studying or air travel, can present unique challenges for people who use wheelchairs. Sarah explained, "At TAFE South Bank, parking is tough, but I now have an allocated undercover space on class days. At first, I was told no—someone even questioned my disability and said it wasn't 'enough'. Some staff are helpful, others not." She also shared that when she told an airline staff member how hard the experience of being in a plane had been, they said, "If you want service, you need to fly with Qantas. We're a budget airline."

Accessibility challenges in public spaces often stem from the persistence of physical barriers that limit independence and dignity. As Penny explains, "[Bathroom doors] can be really heavy. I often have to push with my footplate or feet. I feel like I'm quite strong, but of course, men are stronger. But if someone didn't have the strength or arm movement, they'd definitely need help. That shouldn't be the case." This is confirmed by George, who feels restricted by "Heavy doors to mobility toilets that are hard to open." In the same vein, Daphne wishes for "more accessibility in society" and remarks in the probe what she dislikes about her using a wheelchair is being confronted with "environmental obstacles, steps, big gutters, tiny spaces, no toilets." George describes his home as, "A house without wheelchair accessibility. Kitchen as it is, too small to modify...doors too narrow for a wheelchair so scuffed and battered."

Design oversights in public spaces are common, hindering people in wheelchairs to participate fully in social activities [11]. Anna tells us in the post-probe conversation that "one of the things my friends and I—there's a group of three of us and we all use wheelchairs—we all love musicals, and we wanted to go to the theatre. But there's not capacity in the theatre for more than two wheelchairs at a time. The wheelchair spots are on opposite sides of the theatre." Limitations in the built environment can trigger feelings of stress and insecurity, as Anna pointed out in her diary, "It would have been better if the road curb was not so steep... was nervous I would roll out onto road" and that she feels empowered by "smooth and

well-made surfaces". For her, "moving out to live somewhere more accessible would be life-changing".

5 Discussion and Conclusion

In this exploration of the lived experience of people using wheelchairs toward re-thinking wheelchair design, we found that the combination of exploratory interviews, design probes and post-probe conversations facilitated the participation of people who use wheelchairs in the design process.

Design probes were very useful in facilitating a co-creation process *with* our users. The accessible and inclusive nature of probes facilitated collaboration with wheelchair users to gather rich and meaningful data in a non-intrusive way [19]. Probes overcame mobility challenges of wheelchair users and gave them a sense of autonomy, as they engaged in the activities in their own time, space and could choose which activities to do. This surfaced new knowledge around: the importance of care and contributions within disability networks; viewing the chair-as-body and the desire for autonomy; personalisation of wheelchairs; and barriers and enablers in the environment. In this way, the desires of our wheelchair users were integral to the participatory design process [12].

However, some of the activities were difficult for participants to complete, as Anna said, "I had to ask for some help sometimes with writing or drawing or anything like that". The junior designers who created the probes made assumptions about the best way to engage wheelchair users, the probes activities reflected their personal styles [13]. Some of our wheelchair users were unhappy with particular scrapbook activities, as George wrote of the collage, "Why on earth do you think I'd like to do this?" and on the diary page, "I find this insulting & intrusive & childish & I am not interested in completing it". The fact that only 4/6 participants returned the probe kit, and 2/6 participated in post-probe conversations, indicates a level of disengagement.

From this study, our key design takeaways are:

- *probes can facilitate participation with marginalized people*
- *probes can be inclusive for people who experience mobility conditions; however,*

- *probe activities need to be accessible and sensitive to marginalized people*
- *probe activities should be co-created with marginalized people*

In conclusion, we found that in practice, we tend to design probe activities for *people like us*. But when designing with wheelchair users, the sensitivity bar was raised, and the distance between us increased. As we did not design the probes with them, the activities were not always accessible. Participatory designers understand that it is important to design outcomes *with* marginalized people; however, we argue that we need to go one step back and co-create the participatory activities themselves with potential participants, as part of the design process – especially in sensitive contexts.

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Appendix - Interview Guide

In line with the study’s exploratory nature, the interviews were in-depth, flexible and intended to evolve over time

Semi-structured exploratory interviews

Commence with broad, open-ended questions to set the tone and build rapport

- (1) Could you tell me about yourself?

The next questions are to allow the participant to describe and reflect on their daily activities

- (1) Can you describe what a typical day looks like for you?
- (2) Tell me about a challenge or frustration have you encountered today related to your wheelchair use?

The following questions are to allow the participant to describe their mobility aid.

- (1) What kind of wheelchair do you use?
- (2) How do you feel about your wheelchair?
- (3) Have you come up with any hacks or methods that make your wheelchair more comfortable?
- (4) Do you like to personalize your wheelchair?

Finally, the aim is to allow the participant to share their preferred spare time activities

- (1) What kind of activities do you enjoy doing outside of your daily routine e.g. sport or hobbies?
- (2) How do you like to spend your holidays?
- (3) Can you think of any special occasions or events that you have participated in because you are using a wheelchair?
- (4) What’s an activity you enjoy doing in your wheelchair?

Closure/Debriefing

- (1) Do you have any questions about the interview?
- (2) Is there anything you would like to talk about?
- (3) How do you feel about participating in the interview?

Participants are given the opportunity to ask questions regarding how to use the probe kit.

Unstructured post-probe conversations

A conversation was held with participants post-after they had returned the probe materials to confirm and validate our understandings of the material produced. There are no predefined questions, but each individual’s probe returns are discussed.

Exploring Participatory Methods for Design Research on Disability Inclusion in Public Toilets

Reflections on Using Card Sorting and Photo-elicitation in Delhi India

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Abstract

Card sorting and photo-elicitation are standard participatory methods for design research enquiries. However, existing literature has not sufficiently explored their specific application in inclusive design research for public toilets. This study addresses this gap by demonstrating the use of card sorting and photo-elicitation to enrich the semi-structured interview process in a larger, ongoing design enquiry into inclusion in public toilets in the National Capital Region (NCR) of Delhi, India, focusing primarily on accessibility for people with locomotor disabilities (PwLDs). It reviews the existing literature and discusses the contextual integration of the participatory methods into the overall methodology. It describes the specific adaptations and iterative improvisations to identify the most contextually appropriate approaches subsequently. The paper presents key methodological reflections from the studies conducted, highlighting the usefulness of the methods in the given context. The insights identified in this paper are relevant to understanding the possibilities, advantages, and contextual challenges of using such participatory methods to study ‘wicked problems’ involving multiple stakeholders and vulnerable population groups.

CCS Concepts

• **Social and professional topics;** • **User characteristics;** • **People with disabilities;**

Keywords

Participatory methods, card sorting, photo-elicitation, inclusive design, public toilets

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1 Introduction

Participatory methods are an essential component of design and research [35]. It finds considerable relevance in inclusive design, owing to the human-centric intent of “design (...) that considers key sociological and behavioural aspects” [40]. These methods are instrumental in addressing complex social problems, i.e., wicked problems, where stakeholder participation is essential [16, 25, 37].

Lack of inclusive public toilets is a wicked problem owing to the multifaceted systemic nature and involvement of numerous stakeholders. It is more pertinent for India and similar contexts of the Global South [27]. In public toilets, people with disabilities are significantly impacted by inaccessibility, especially those with locomotor disabilities. This is because a lack of accessible public toilets leads to severe limitations in public life for people with disabilities [20].

1.1 Relevance and Intent

Design researchers’ reflections on using participatory methods to address issues for inclusive public toilets, especially for people with disabilities of the global south, are not well-documented [6, 10, 39]. This paper addresses this gap. The authors discuss a reflective narration of integrating card sorting and photo-elicitation to understand barriers and perceived importance of key design parameters for inclusion in public toilets. It involves people with locomotor disabilities (PwLDs) and other stakeholders like cleaners, managing staff, engineers, contractors, etc. The intent of integrating these methods is as follows: photo-elicitation to identify specific accessibility barriers in the built environment and card sorting to determine the relative importance of various identified parameters of inclusion in public toilets from stakeholder perspectives.

1.2 Scope

The scope of the study is limited to discussing methodological reflections on integrating the above-mentioned participatory methods to enrich and support the semi-structured interviews. The study is a part of a larger ongoing study on understanding systemic accessibility challenges in urban public toilets for PwLDs. The discussion on the identification of various parameters of inclusive public toilets was conducted before the study and is beyond scope of the paper.

2 Literature Review

The literature review followed a traditional narrative approach. The search was carried out in Scopus and Google Scholar, utilising the

following keywords: ‘card sorting’, ‘photo-elicitation’, ‘participatory design’. Studies relevant to inclusive design were selected.

2.1 Foundational Understanding

The foundations of this study are rooted in the understanding and evolution of card sorting and photo-elicitation as participatory tools, and in subsequent attempts to contextualise them.

2.1.1 Card Sorting. Card sorting broadly refers to various types of activities involving the use of ‘cards’ to sort, group, rank, or arrange information in a particular manner [21]. It is a participatory method used to understand how participants make sense of any information [14, 30]. Its use has evolved from traditional ethnography to modern-day design thinking [1, 19]. The numerous adaptations of this method are broadly classified into grouping-based or ranking-based. [31] describes six grouping-based card sorting techniques for the interaction design domain: open, closed, hybrid, reverse, modified Delphi and remote. On the other hand, [7] describes a ranking-based card sorting technique, Hierarchical Card Sorting (HCS). The existing literature indicates that card sorting has evolved to be contextually flexible, based on intent, nature of interactions and demography of the participants.

2.1.2 Photo-elicitation. Photo-elicitation is a qualitative method that incorporates photographs to elicit responses [12]. It originated as a method from anthropology, evolving across sociology, education, and public health [5, 17]. In [36], this method was alternatively termed ‘photo-interviewing’ instead of photo-elicitation, while [29] described it as ‘photo-feedback’. Another interpretation is ‘photovoice’, where the participants are asked to photograph a phenomenon [38]. Photo-elicitation continues to be contextualised in various ways. For example, it can be used as a facilitator for group discussions [36].

2.2 Applications in Research

Due to their versatility, both methods have found substantial applications in research as follows:

- **User Experience (UX) Design:** Despite being used in various domains, card sorting is used most in interaction design, specifically UX research. It has been established as an effective way of gathering and evaluating user insights for developing seamless information architecture of digital products [24, 30].
- **Service Design:** As a commonly used method in design thinking, card sorting has also found its way into the domain of service design. [9] describes its effectiveness in service prototyping research, specifically to develop a “coherent structure of information”.
- **Healthcare & Public Health:** Photo-elicitation has been used to engage with people of diverse ages, genders, and socioeconomic backgrounds in a participatory manner in public health [2]. For example, in Ethiopia, [33] highlighted photo-elicitation with interviews on understanding the role of fathers in childcare. [28] demonstrated its use in assessing rural healthcare needs in China.
- **Education:** Various authors have used photo-elicitation to understand student perceptions and experiences worldwide

[13, 22]. Card sorting has been demonstrated to be effective in gathering insights for creating better digital learning spaces [15].

- **Public Infrastructure:** In public infrastructure, photo-elicitation has been used to study perceptions like attitudes towards the presence of green spaces and the impact of spatial associations on family life from children’s perspective [34].

2.3 Relevant Examples for Inclusive Design Research & Public Sanitation

The following case examples identified from the literature review were relevant for the current study.

- **Social impacts of improved cooktops in Uganda:** Card sorting is utilized to identify relative impact of a phenomenon as it was used in this study to assess the impact of an enhanced cooktop design at three levels from ‘least’ to ‘most impacted’ [26].
- **Local water and sanitation Practices in Nepal:** This case demonstrates photo-elicitation to understand perspectives of local water and sanitation systems from the lens of diverse communities in Nepal [2]. It explained how photo-elicitation can provide a means of identifying concerns for vulnerable groups.
- **Gender inclusion in school toilets of Burkina Faso:** This example demonstrates deriving thematic insights using photo-elicitation to study the perspectives of schoolgirls and the challenges they face concerning school toilets [4].

2.4 Key Insights

The following key insights emerged from the review:

- Card sorting and photo-elicitation are flexible and adaptable approaches as per contextual requirements of a particular wicked problem.
- Card sorting can be used for categorical grouping and to identify perceived hierarchies, for example, the perceived relative impact of a phenomenon [26].
- Photo-elicitation is especially useful for vulnerable population groups (like PwLDs) and can be used to identify key concerns [2].
- Limited studies were observed that utilised card sorting and photo-elicitation in inclusive design research of Indian urban public toilets, wherein this study aims to contribute.
- There are limited discussions on methodological challenges of using such methods in contexts like India and global south.

3 Methodology

3.1 Research Context

The study is situated in the cities of Delhi, Noida, and Gurugram within Delhi NCR. To get a holistic understanding, key stakeholders of the public toilet system are identified and hierarchically classified based on their degree of engagement (Table 1).

Following the stakeholder identification, preliminary field explorations were conducted. Semi-structured interviews without any

Table 1: Key Stakeholder Groups Identified for the Study

S. No.	Stakeholder Group	Role
Primary Stakeholders		
1	PwLDs	Key user group whose concerns are being explored
2	Able-bodied Users	Other users whose perceptions of accessibility and inclusion in public toilets are explored
3	Caretakers/Cleaners/Sanitation Workers	Responsible for hygiene and cleanliness of public toilets
4	Sanitary Inspectors/Managing Supervisors	Responsible for overseeing the state of multiple public toilets in an area
Secondary Stakeholders		
5	Architects/Urban Planners	Responsible for architectural design and planning decisions around public toilets; working in ULBs or private organisations
6	Engineers	Responsible for construction and infrastructural management of public toilets; working in ULBs or private organisations
7	Caregivers	Accompanying persons with PwLDs for personal assistance to use public toilets
Tertiary Stakeholders		
8	Contractors / Vendors / Suppliers	Responsible for on-site implementation/construction
9	Disability NGO Officials	Staff in non-governmental organisations (NGOs) catering to various needs of PwLDs
10	Managing Organisation Officials	Officials of private organisations contracted by ULBs for management of public toilets

participatory methods were conducted in this phase to later compare the differences. Based on the field insights from this phase and literature review, card sorting and photo-elicitation were identified as participatory methods to support the stakeholder interviews. Photo-elicitation was used during interviews with PwLDs to identify key accessibility barriers. Card sorting was used to help other stakeholders determine the perceived relative importance of key parameters related to inclusion in public toilets. These parameters were previously identified as part of the larger study.

The interviews were conducted across 12 public toilets, various ULB offices, and private organisations. The sample size was 30 participants, with 12 from the primary stakeholder group, 10 from the secondary stakeholder group, and 8 from the tertiary stakeholder group. Verbal consent was obtained before conducting the interview and card sorting/photo-elicitation. Before obtaining consent, the interview process was thoroughly explained, including use of cards/photographs.

3.2 Developing a Toolkit for Card Sorting

Seventeen identified parameters are grouped into five broad ‘factors’: urban context, information, infrastructure, services and human needs. Cards were created for each parameter. Informal interactions were conducted with stakeholders to understand the nature of communication, articulation and awareness. As discussed in [18], this is essential when designing visual aids. The card set design process involved multiple iterations and a pilot-testing phase to evolve the most appropriate design for each card and the best approach for using the cards during the interview. A peer review

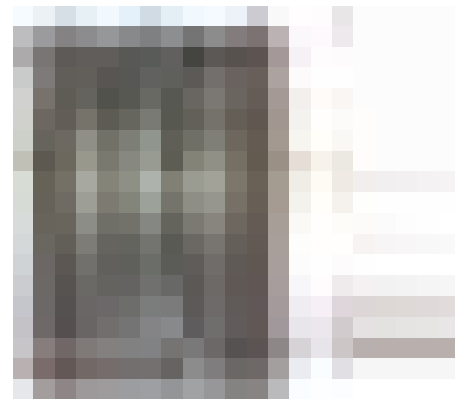


Figure 1: Sample Card for parameter of ‘Signage’. Created by Authors and icon is available in public domain under Creative Commons.

was also undertaken with two other inclusive design researchers, and their suggestions were incorporated. Figure 1 shows a sample final card design with all its elements. Figure 2 shows all the cards of the identified parameters.

Five distinct colours were selected for the five broad categories (as shown in Figure 2). The chosen colours were kept vibrant to break monotony. Each card primarily has two components (Figure 1) – the visual viz. either an icon or image(s), and the textual component, which is bilingual, i.e., in English and Hindi. The

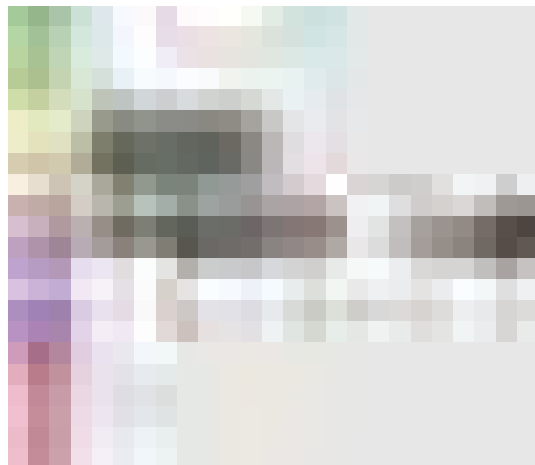


Figure 2: Full set of cards (parameters) arranged as per the five broad categories. Created by authors and icons used are available in the public domain under Creative Commons. Photographs used have been clicked by authors.

selected font is Lexend for both English and Hindi, owing to its wider letter forms and ‘hyper-spacing’ [11]. Each card is of A5 size, intending to be easy to carry and use.

3.3 Evolving the Photo-elicitation Toolkit

The photographs were used to support the identification of key accessibility barriers that PwLDs face in public toilets. A typical user journey was utilised as a framework for evolving the toolkit. The journey involves the following broad steps: identifying the toilet, reaching the toilet, entering the toilet, moving around inside the toilet (manoeuvring), using the fixtures, using other amenities (like handwash, etc.) and then exiting. On-site photographs were taken to document the distinct scenarios at each step.

Photographs were selected depicting 2-3 distinct scenarios for each significant journey step, capturing all typical elements of the public toilet. The photographs were printed in size A5. The card set was peer-reviewed by two other inclusive design researchers working in similar domains to ensure the pictures represented on-ground scenarios as comprehensively as possible. It was ensured that the selected photographs were not blurry or too dark and were visible under different lighting conditions. Pilot studies were conducted to test the photograph prints, ensuring they were clear enough to identify accessibility barriers and aid responses. This type of photo-elicitation, where photographs are used to elicit responses about a specific user journey, is alternatively termed ‘photo-journey elicitation’.

3.4 Integration and Implementation with Semi-structured Interview

3.4.1 Integration and Implementation of Card Sorting. The semi-structured interview with other stakeholders involved open-ended questions about the level of awareness and integration of accessibility in the design, construction, management and maintenance of public toilets. The card sorting toolkit was integrated into

this interview process towards the end, during which participants were asked about their opinions on which identifying parameters are most important in creating more inclusive public toilets for PwLDs. This followed four broad steps – explanation of the exercise, presentation of cards, sorting (ranking or grouping) and discussion. Table 3 (a) and Table 3 (b) discuss the advantages and disadvantages of different approaches of card sorting – based on methods of presentation (presenting cards factor-wise or cumulative i.e., all together) and based on methods of sorting (ranking or grouping).

Based on the pilot assessment, it was concluded that a cumulative approach to presenting the cards is appropriate to assess relative importance across all parameters, irrespective of the factors. For sorting, it was found that grouping into three categories was challenging; therefore, only two categories – ‘Important’ and ‘Not Important’- were decided to be kept.

Given the contextual variations between the stakeholder participants having varying levels of understanding and experiences, it is not advisable to have a ‘one size fits all’ approach. The intent of card sorting here is limited to validation and aiding the interview response to reveal critical parameters. Therefore, depending on the specific stakeholder’s comfort and understanding, providing an option of grouping or ranking was useful.

3.4.2 Integration and Implementation of Photo-journey elicitation.

The semi-structured interview with PwLDs asked questions about experiences with public toilets and concerns encountered during a typical user journey. To aid the barrier identification process, photo-elicitation was used to prompt more nuanced responses regarding specific issues and challenges with multiple elements in a public toilet.

Towards the concluding section of the interview, the participants were explained the ‘photo-journey elicitation’ process, its intent, and told that they would be shown a series of photographs of existing public toilets in Delhi NCR, depicting different scenarios encountered during a typical user journey to a public toilet. For each photograph shown, they would be asked the following question: “जब आप इस तस्वीर को देखते हैं, तो आपके मन में क्या विचार आते हैं?”

(Translation: What comes to mind when you look at this picture?). The responses would be recorded using audio recorders and/or field diaries. The respondents would often point at various parts of the photograph to talk about the issues, which would be recorded as part of field notes in the following manner:

Pointed at <part of photograph, e.g. entrance steps> and remarked the following, “इसपे चढ़ने में दिक्कत आएगी मुझे, इस टॉयलेट में घुसना बहुत ज़्यादा दिक्कत देगा!” (translation: “I will have trouble climbing onto this, getting into this toilet will be extremely difficult for me!”).

It is important to note that responses were always recorded in Hindi, and thematic coding was carried out using Hindi responses to avoid loss of meaning. Figure 3 shows some instances of participatory methods in action with different stakeholders.

Table 2: (a). Based on the Methods of Presentation

Method	Advantages	Disadvantages
Factor-wise Approach	• Relative importance between parameters of each broad factor is identifiable Easier to handle in less physical space, owing to fewer cards in each step	• Difficulty in comparison with parameters of other factors • Longer duration as compared to cumulative approach • Repetition may lead to a higher respondent burden
Cumulative Approach	• Relative understanding of importance between all design parameters across all factors is identifiable • Lesser duration as compared to factor-wise approach No repetition	• Difficult to execute in smaller spaces

Table 3: (b). Based on the Methods of Sorting

Method	Advantages	Disadvantages
Ranking Grouping/ Selecting	Ordinal understanding of relative importance Easier to pick and identify important ones	Respondents share that ‘all are important’ Difficulty in decision-making on ‘what’s not important?’



Figure 3: Participatory methods are being used with various stakeholders. Photographs clicked by authors.

3.5 Methods of Analysis

The approach was primarily qualitative thematic analysis using coding [3]. The baseline codes were the five identified factors of urban context, information, infrastructure, services and human behaviour. For photo-journey elicitation, responses to each photograph were coded on the picture (Figure 4), as in visual coding [32]. The codes

were then compared with the interview responses to identify the key barriers highlighted by the respondent.

For card sorting, the insights from the ranking order or grouping/selections were compared to the coding insights from interview responses to validate which parameters were at a higher level of



Figure 4: Visual Coding of Participant Responses in Photo-elicitation.

perceived importance. Additionally, insights into the specific stakeholders' roles and influence were gathered through narratives and stories triggered by using card sorting.

4 Methodological Reflections and Discussion

The integration of card sorting and photo-elicitation into the interview process had a positive impact on participant engagement and response quality. Various contextual challenges and nuances were observed, as discussed in this section.

4.1 Participant Engagement

The methods significantly increased participants' engagement compared to traditional interviewing, aligning with other studies [8, 26]. It was observed that participants were more receptive and responsive, enriching the interview responses compared to preliminary studies without such methods. The flexibility and adaptability of card sorting and photo-elicitation played an instrumental role in reducing respondent burden. For example, in card sorting, some participants preferred selecting the more critical parameters, while others preferred ordering or ranking. Using visual aids (cards and photographs) as tools contributed to increased engagement, as highlighted in [23]. In most cases, participants voluntarily paused their ongoing work or handed it over to someone relevant to engage with the interviewer once they learned about the approach. The participants who seemed hesitant at first would start engaging more receptively after seeing the cards and photographs. Anecdotal accounts, or 'stories', were a typical response to visual aids.

4.2 Quality of Responses

The responses were more nuanced and specific, with participants sharing more anecdotal evidence, and the visual aids were potential triggers. Here are a few examples to illustrate the above point.

The first example is from the interview conducted with a Cleaner & Caretaker (Male, 42 years old). The service model in this case was such that the public toilet, under the jurisdiction of a ULB, was being managed by an outsourced private organisation. During the card sorting process, he picked the 'Operations' card, and this triggered him to share more nuances and specific systemic challenges. He stated that cleaners and maintenance staff can only ensure that the toilets and all the accessibility facilities are clean and well-kept. They cannot address any infrastructural damage or concerns. He

further stated that, while outsourcing, infrastructural damage is often not addressed. He went on to share potential recommendations that could address such issues.

The second example is from the photo-elicitation exercise, in which a photograph of a Western toilet seat WC was shown to a participant (Female, 44 years old, with lower limb impairment and wheelchair user). She highlighted the accessibility challenges, but particularly emphasised one specific aspect: the tap's position. Even though the health faucet was appropriately located in the photograph (as confirmed with the participant), it reminded her of an experience in which it was instead located on the rear wall, creating a challenge. This highlights how a specific accessibility barrier was elicited despite the photograph showing the opposite.

The abovementioned examples highlight how these methods go beyond their original intentions to provide deeper, often unexpected nuances and enrich interview responses.

4.3 Challenges and Limitations

The researchers experienced numerous challenges of card sorting and photo-elicitation. The first challenge was using the toolkit, especially the card sorting toolkit. As the intent is to spread the cards out for participants, it becomes a strenuous activity in scenarios with limited flat surface space, for example, the cleaner's desk/cabin in a public toilet.

Secondly, card sorting and photo-elicitation are time-consuming processes; not everyone is willing to devote that much time to the activity. Even though it is more engaging than a traditional interview, there were rare instances in which participants tried to rush through, gave up in the middle, or refused to participate due to time constraints. The third challenge was that a few participants faced difficulty ordering or grouping the cards, feeling that all were equally important.

The fourth challenge was that, even though the photographs and cards serve as soft triggers to recall relevant experiences, they would become overwhelming for the researcher to record and follow through, as participants would get excited and share a lot of information in a short time. In such a scenario, the researcher would have to request the participant to step back and repeat what was said to clarify.

The challenges mentioned above are highly contextual and may vary across contexts, thus offering potential for further exploration.

5 Conclusion and Way Forward

This paper highlights methodological reflections on using participatory methods, such as card sorting and photo-elicitation, as part of an ongoing enquiry into inclusion in public toilet design in Delhi NCR, India. It has reviewed relevant perspectives from the existing literature, translating them into an evolving contextual methodology integrated with semi-structured interviews.

The specifics of contextualisation in both methods have been highlighted as reflections. Using visually engaging cards for card sorting has been demonstrated to be an effective adaptation, along with a mixed-option approach of grouping and ranking. Photo-elicitation has been demonstrated to be contextualised in this case as 'photo-journey elicitation'. It shows the usefulness of these methods in inclusive design research for urban India and beyond, as a

means of authentic engagement with systemic concerns by capturing nuanced stakeholder perspectives. It highlights participant engagement and the quality of responses as key areas in which such participatory methods were advantageous, while describing experiential challenges as potential areas for exploration.

The contextual utilisation of card sorting and photo-elicitation offers a promising direction and application for developing policy frameworks and their implementation. Anchored in an evidence-based narrative, visually structured, and incorporating intersectional stakeholder views, can enable a dynamic model of design evolution and decision-making for public toilets and the extended public realm. The authors hope this can pave the way for the interdisciplinary use of such participatory methods to address other 'wicked problems', especially in the global south.

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Guerrilla Research Actions for Reflexivity: Engaging Design Communities in Informal Spaces of Dialogue and Self-positioning

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Abstract

In the contemporary landscape marked by systemic crises and complex interdependencies, participatory design faces the critical task of cultivating designers' consciousness regarding their roles, privileges, and relational positions. This paper investigates reflective, positional, and relational practices implemented through a Guerrilla Research Action at Politecnico di Milano. By situating an anonymous, interactive installation within everyday spaces of the campus, the action facilitated self-reflection among participants, including students, professors, professionals, and visitors, on personal and professional identities, team dynamics, and systemic power structures. Conceived as a form of participation in the broadest sense, the guerrilla action invited participants to engage in a process of auto-ethnographic reflection - a situated inquiry into one's own positioning and identity within design processes. Rather than focusing on pragmatic toolkits for co-design facilitation, this research highlights the significance of designerly reflexivity before, during, and after participatory engagements. Insights gathered from participant interactions underscore the transformative potential of reflective practices in enhancing designers' awareness, empathy, and responsibility. In this sense, the guerrilla action serves as a micro-infrastructure enabling recognition across differences, contributing to the discourse on participatory design as a relational process that fosters inclusion and equity through heightened self-awareness and systemic thinking.

CCS Concepts

• Human-centred computing; • Collaborative and social computing; • Collaborative and social computing design and evaluation methods; • Ethnographic studies;

Keywords

Participatory Design, Reflective Practices, Positionality, Relationality, Conscious Design, Guerrilla Action, Systemic Thinking

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1 Introduction

The urgency for reflexivity, positionality, and relationality within participatory design emerges from the increasingly entangled crises defining our era: climate breakdown, social inequality, digital acceleration, and epistemic fragmentation [1]. In this context, participatory design must move beyond inclusion as representation, toward participation as relational awareness and shared responsibility. This paper investigates how creative participatory research actions and methods can support reflective practices, deepening designers' understanding of their positional roles within participatory processes and highlighting the importance of cultivating inner awareness as a foundation for systemic change [2].

This paper reports on a Guerrilla Research Action (GRA): an anonymous, month-long participatory installation staged in an everyday university transit space. Through low-threshold visual prompts and sticker-based micro-gestures, participants were invited to self-position on identity, privilege, collaboration, and responsibility.

Taking inspiration from the so-called peaceful guerrilla movement, which is “a style or attitude to making interventions in urban spaces (Guerrilla Gardening being one such example)” [3], the Guerrilla Research Action presented in this paper serves as a micro-infrastructure for reflexivity that makes collective self-reflection visible and discussable in situ.

2 BACKGROUND KNOWLEDGE

This section outlines the theoretical foundations that frame the Guerrilla Research Action (GRA), defined as informal and distributed forms of participation, situating it within the broader discourse on participatory and systemic design. It traces the evolution of participatory design (PD) from its democratic and political origins to its contemporary rearticulations as a relational, systemic, and reflexive practice. By combining insights from participatory, co-design, and systemic design literatures, it positions the GRA as a micro-intervention that bridges inner transformation and collective awareness.

2.1 From Democratic Ideals to Reflexive Participation

Participatory Action Research (PAR), emerging in the 1940s, is oriented toward social action and change, bringing researchers and

participants into collaboration to understand a problematic situation and intervene to transform it [4, 5]. While action research is often traced to Lewin's work, PAR draws on multiple intellectual and political lineages. Lewin articulated the research–action cycle as a spiral in which action and reflection alternate and recursively inform one another [6]. In parallel, Latin American PAR developed through Orlando Fals Borda's commitment to popular knowledge-making and political struggle [7], and Paulo Freire's critical pedagogy, where dialogue and critical consciousness are framed as conditions for emancipation [8]. Within design-related accounts of PAR, Giorgi et al. identify three features that resonate strongly with designerly practice: co-production (sharing knowledge to build new meanings), elicitation (using visual elements to support inquiry), and embodiment (engaging participants through making, artefacts, and performance) [9]. Similarly, participatory design (PD) has long rested on democratic ideals of inclusion, dialogue, and collective agency [10–13]. Emerging in the 1970s as a political project to democratize workplaces and technological decision-making, PD sought to give workers and citizens greater control over systems shaping their lives. Early “design things” [12] were socio-material assemblies sites for negotiation, controversy, and meaning-making.

In contemporary contexts of hybrid, overlapping publics, participation becomes a relational process engaging multiple forms of presence, agency, and reflection [14–16]. Echoing the reflexive turn in the social sciences [17], design scholarship now questions objectivity and stresses “the importance of researchers critically navigating their positionality throughout the research process” [18]. Reflexivity complements empowerment and inclusion: relational sensitivity awareness of how interactions and power asymmetries shape collaboration is fundamental [15]. Reflexivity extends this sensitivity inward, examining assumptions, privileges, and positions within design situations; it is now a core competence for working with complexity [19, 20]. Beyond an individual skill, it is collective and situated. Schouwenberg and Kaethler (2022) [21] describe an auto-ethnographic turn in which designers use their own experience as inquiry material, softening boundaries between researcher and participant. In participatory settings, this entails artefacts and situations that scaffold shared reflection and make collective subjectivities visible. Participation and reflexivity are intertwined, shaping both understanding and outcomes: roles range from passive data generation to active forms that surface antagonistic interests and belongings. “Furthermore, more critical and reflective practices are needed within participatory design, especially focusing on the role of the designer and the differences and inequalities in the participatory design setting” [22].

In this sense, the GRA builds on PD's practices and values, but shifts focus from co-creating artefacts to co-creating awareness through visual, physical interfaces that invite low-effort participation.

2.2 Evolving Practices: Co-Design, Infrastructuring, and Systemic Participation

In recent decades, participatory design has diversified into methods such as co-design, infrastructuring, and participatory city-making, exploring how collaboration can endure over time and across scales.

Co-design stresses distributed authorship through collective exploration and ongoing negotiation [22, 24, 25]. Karasti (2014) [24] reframes this as infrastructuring: cultivating socio-material conditions so participation persists. In urban contexts, participatory city-making becomes an iterative, narrative process for shaping futures through design-enabled dialogue [27, 28]. Together, these shifts mark PD's movement from discrete “projects” to continuous “processes” grounded in adaptation and care.

PD now extends into public sector innovation, organizational transformation, and urban governance [29–31]. Participation is framed as relational ecosystems of care and shared learning, where collaboration exchanges skills and perspectives [32, 33]. This systemic expansion redefines the designer from facilitator to relational catalyst, infrastructuraler, and co-learner [34–36].

From a systemic design perspective [1, 37], practice involves creating and nurturing relationships among actors, artefacts, and systems. Systemic design couples systems thinking's holistic orientation with design's situated, participatory sensibilities, linking individual, organizational, and societal scales while attuning to interdependence and feedback. Systemic change also draws on inner capacities: self-awareness, openness, empathy [2, 38].

Within this frame, relationality is not a by-product but a design material [39]: interactions, artefacts, and spatial configurations shape the social structures of practice. The GRA adopts this orientation by making visible often-invisible relations, such as privilege, hierarchy, care, and collaboration that constitute the ecology of design education and practice. This resonates with the Quintuple Helix [40], which highlights co-evolution among academia, industry, government, civil society, and the environment. Situated in academia, the GRA shows how the university intersects and connects these spheres. Accordingly, the GRA contributes to this evolution: rather than orchestrating a single collaborative event, it provides an infrastructure for reflection that sustains community-wide awareness; it is an inner–outer intervention that starts from individual introspection and extends to collective consciousness and systemic awareness.

3 METHODOLOGY

The following section outlines the methodological approach that informed the design, implementation, and analysis of the GRA. It describes how Research-through-Design (RtD) was applied to translate theoretical concepts into practice and how ethical considerations shaped the open, anonymous nature of the installation. By detailing the design of the intervention, data collection, and analytical process, this section clarifies how the study sought to explore reflexivity not only as a research object but as an embodied design experiment.

3.1 Research Approach

This research employed a research-through-design (RtD) methodology [41], where the process of designing and implementing the installation served as both inquiry and intervention. The activity was positioned within a doctoral project exploring relational and systemic approaches to design in urban and social contexts.

The experimental participatory research practice was defined as a GRA, understood here as an informal, distributed, and situated

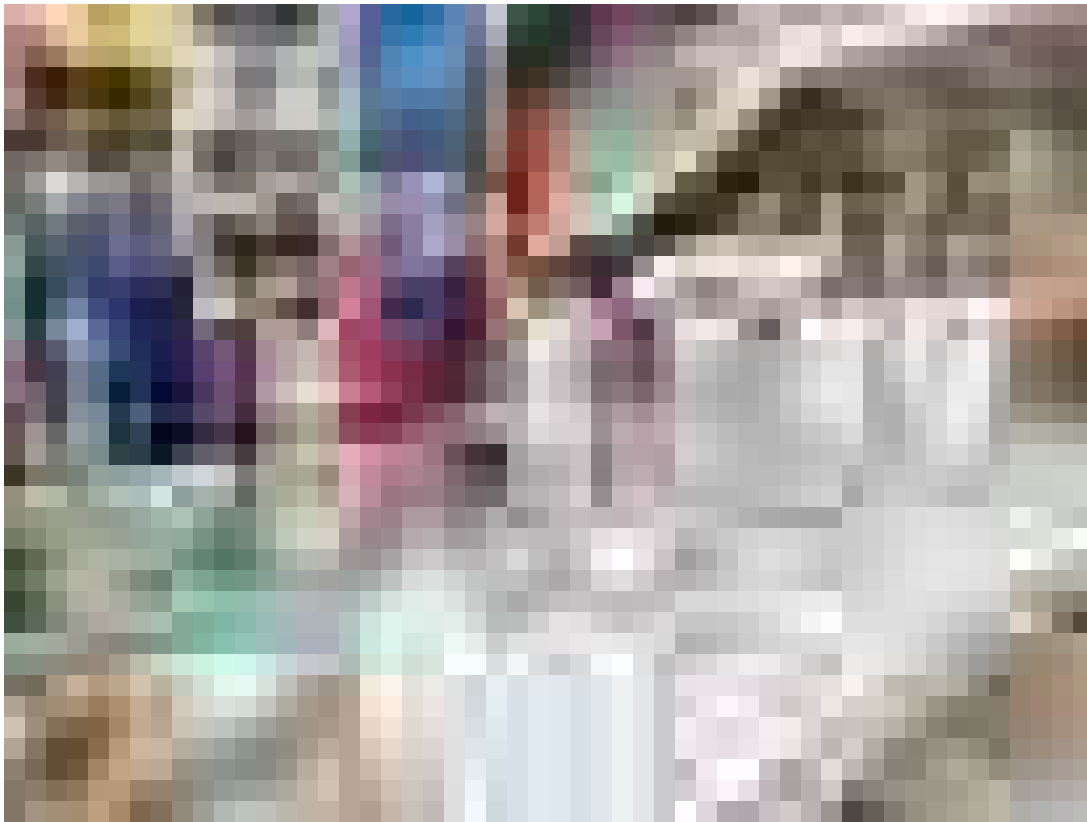


Figure 1: View of the catwalk installation.

mode of inquiry. Drawing from Gedicks' (1973) [42] idea of guerrilla research as a reversal of traditional institutional machinery, this approach sought to subvert the hierarchies and procedural constraints that often govern formal research settings. In this sense, it resonates with what Caldwell et al. (2015) describe as guerrilla research tactics: creative, low-threshold, and often ephemeral interventions that operate within everyday contexts to engage people outside conventional frameworks. As Best (2007) [43] also notes in her work on critical youth studies, such methods are particularly suited to exploring lived experience in situ, privileging immediacy, participation, and relational encounter over control or prediction.

In the context of this study, the Guerrilla Research Action relocated reflection from private to public space, transforming an ordinary passageway into a collective site of inquiry. It created opportunities for spontaneous self-awareness and shared meaning-making without imposing formal facilitation, structure, or hierarchy. The action can therefore be understood as a form of reflexive participation, where participants become both subjects and co-researchers through their gestures, choices, and interactions. At the same time, it operates as an inner-outer design intervention, one that begins with individual introspection and extends toward collective consciousness and systemic awareness.

Through this lens, the GRA functions simultaneously as method and metaphor: a tangible experiment in reflexive participation and a small, situated gesture toward the relational and systemic shifts

that participatory design must continue to embrace. Implemented as an open, month-long installation [40] on the catwalk of Campus Bovisa at Politecnico di Milano, the format drew inspiration from participatory installations such as Bathroom Data by Domestic Data Streamers, self-assessment exercises from the Product-Service System Design Studio, and relational experiments such as the Plugins Workshop [40].

3.2 Design of the Installation

The installation consisted of 16 posters, including an introduction, a conclusion, and 14 question-based panels organized into five thematic areas:

- **Me as a Person:** identity, origins, privilege.
- **Me as a Designer:** motivation, purpose, values.
- **Me within the Team:** collaboration, roles, interpersonal dynamics.
- **Me within the Design Process:** strengths and uncertainties across design phases.
- **My Power and Responsibility:** systemic influence, ethics, external stakeholders.

Each poster invited participants to place stickers as responses to specific prompts. The anonymity of the setup, combined with the absence of institutional logos, encouraged candid engagement.



Figure 2: Overview of the first six posters.

Disclaimers emphasized complexity and served to protect against any misunderstandings or oversimplifications, encouraging participants to reflect rather than reach definitive conclusions.

3.3 Data Collection and Analysis

Visual data (sticker distributions), field notes, and informal feedback were collected throughout the month. In addition, shadowing observations, photographs, and short video recordings were made to document participants' interactions, gestures, and spatial behaviors in situ. These materials provided complementary insights into how people approached, interpreted, and engaged with the installation over time, capturing nuances of participation that might otherwise remain invisible. Responses and visual traces were interpreted through qualitative content analysis, focusing on patterns of engagement, thematic recurrence, and evidence of reflexive thinking. The aim was not to quantify results but to understand how informal participatory encounters could stimulate self-awareness and systemic reflection.

Regarding ethics and exploratory nature, participation was voluntary and anonymous; no personally identifying information was collected. The posters included a brief note clarifying the purpose and anonymity. The study followed an exploratory research-through-design stance: it prioritized formative insight and transferability over representativeness, treating the installation as a probe designed to elicit situated reflections in context.

4 THE GUERRILLA RESEARCH ACTION

This section provides a detailed account of the Guerrilla Research Action (GRA), describing its spatial setup, interactive mechanisms,

and visual language. The installation was conceived as both a design artefact and a social situation: it transformed an ordinary university passage into a temporary infrastructure for reflexivity, where participants could engage through simple, tactile gestures. Its intent was not only to collect responses, but to stage an encounter between people, space, and ideas - testing how design can activate self-positioning and awareness in motion. The intervention took place along the catwalk inside the main building of [Campus], selected for its liminal character and constant flow. As a corridor, the catwalk is typically experienced in fragments, crossed quickly, shared with others, and shaped by everyday academic rhythms. Importantly, it is also a familiar exhibition surface within the school: a space regularly used to display temporary installations and students' work. The GRA re-appropriated this existing infrastructure from a primarily showcase-oriented function into a collective space for reflection and participation, extending its audience beyond visitors and passers-by toward an active public of contributors. Visually, the installation was intentionally restrained and relied on a deliberately anonymous graphic identity. The posters did not reproduce the university's institutional branding and did not signal authorship; their detached visual language was designed to reduce social exposure, support spontaneity, and enable participation without requiring participants to position themselves as representatives of specific roles (e.g., student, staff, faculty). Sixteen posters were aligned along one side of the catwalk at eye level, each paired with a dispenser of round-colored stickers. The graphic design used a neutral palette: mainly white and black with a limited set of accent colors - so that the stickers could become the primary visual signal. As participants added marks, each surface shifted from a



Figure 3: Collective engagement during the installation.

sparse prompt into an evolving constellation, making collective orientation visible over time.

Interaction was intentionally low-threshold. Participants responded by placing a sticker onto pre-defined categories on each poster, leaving a trace that was quick to perform yet publicly legible. The layout structured a progression from self-positioning to systemic accountability, allowing participants to engage incrementally as they moved through the corridor. The accumulation of stickers did more than record individual answers: it produced a shared “portrait” of positions that could be read, revisited, and negotiated by others. By situating this process in public view, the action rendered reflexivity as a collective practice performed in everyday circulation rather than isolated in a dedicated workshop setting.

The GRA can therefore be described as a micro-scale participatory intervention aimed at activating reflexivity within everyday studying and working life. Installed in a highly trafficked university passage, it leveraged the temporality of movement and the familiarity of the catwalk as an exhibition corridor, while the anonymity of the graphics and the simplicity of the interaction made engagement accessible, spontaneous, and non-intrusive.

4.1 Interaction grammar

The installation’s interaction grammar centered on stickers as a minimal yet expressive medium, chosen for their familiarity, immediacy, and non-verbal communicative potential. Participants could:

- **Select a single option:** marking agreement or immediate intuition.
- **Split a sticker:** signaling nuance, partial alignment, or hesitation.
- **Layer stickers:** expressing ambivalence, contradiction, or evolution over time.
- **Compose small shapes or arrows:** highlighting relationships or responding to others’ inputs.

These micro-gestures gradually transformed the posters into living diagrams of collective self-positioning. The stickers acted as traces of thought but also as conversational cues; they prompted others to stop, read, and compare. The grammar accommodated both asynchronous reflection (individuals engaging privately) and spontaneous dialogue, when groups formed organically to interpret, debate, or mirror each other’s choices. The repetitive, tactile act of placing a sticker: light, silent, and quick, became a ritual of reflection accessible to all.

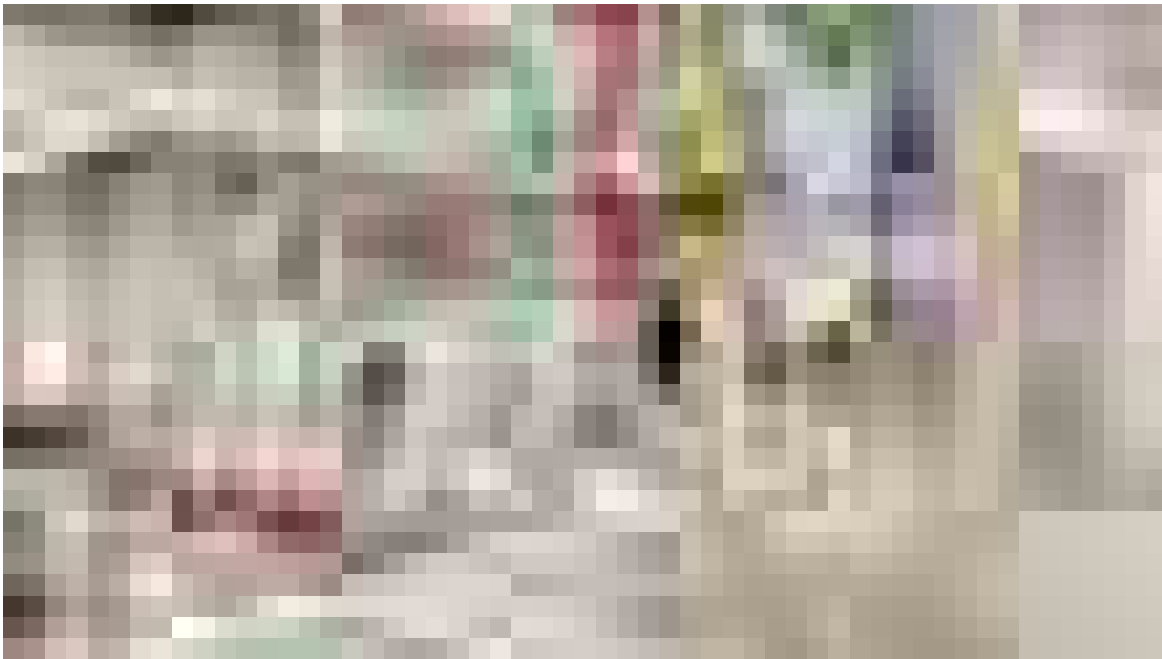


Figure 4: Example of individual interaction.

4.2 Sample prompts

The prompts were deliberately concise, avoiding disciplinary jargon and inviting multiple interpretations. Each question sought to provoke introspection without judgment, maintaining a balance between personal relevance and systemic implications. Examples included:

- “Which parts of your identity give you privilege here — and which do not?”
- “What drives your motivation and purpose as a designer?”
- “What role do you usually take in a team — and what role do others need from you?”
- “Where in the design process do you feel most uneasy — and why might that discomfort be valuable?”
- “Who outside your team meaningfully shapes your project — and how do you acknowledge their influence?”

Every poster carried a short framing paragraph and a closing line of “further questions,” guiding deeper contemplation for those who lingered. The accumulation of prompts created a rhythm of self-inquiry that mirrored the layered nature of systemic awareness.

4.3 Spatial dramaturgy

The spatial dramaturgy of the installation shaped engagement. Positioned along a linear pathway, the sequence moved from the intimate to the collective: early posters encouraged personal introspection, mid-sequence panels addressed collaboration and process, and later ones explored power, responsibility, and ethics. This gradual unfolding rewarded those who traversed the full length with a perceptible narrative crescendo from identity to interdependence.

Participants could enter at any point, yet many chose to walk the entire line, creating self-directed “performances” of reflection. The

setting’s openness allowed accidental audiences: observers pausing to watch others, students photographing favorite questions, or teachers integrating the installation into class discussions. In this way, the action extended beyond interaction to become a temporal and social choreography of participation.

4.4 Maintenance and adaptation

Maintenance was treated as part of the design process rather than an afterthought. Posters were checked weekly to replenish stickers, document evolving patterns, and note emergent behaviors, such as participants informally “hosting” friends, explaining prompts, or creating new symbol systems with the materials. Minor vandalism or over-saturation was addressed through gentle cleaning or repositioning.

These adaptive gestures revealed that the installation itself was alive and relational: it demanded care, responsiveness, and attentiveness, mirroring the very themes it invited participants to explore. In this sense, maintenance became a practice of ongoing design stewardship, embodying the iterative ethics of participatory research.

5 RESULTS

Over four weeks, the installation engaged hundreds of participants: design students, professors, professionals, and international visitors. It operated both as a participatory experiment and a living social artefact, revealing how design communities make sense of roles and relationships when offered informal opportunities for reflection and self-positioning. The analysis addresses four aspects: participation and engagement, forms of reflection and expression,



Figure 5: Results from the “Me as a Person” and “Me as a Designer” prompts.

thematic insights, and practical observations from the installation process.

Participation was spontaneous and sustained. The open, playful sticker format lowered entry barriers and supported both quick and reflective interactions. High visibility invited curiosity and conversation; brief encounters became moments of introspection, turning everyday movement across the campus walkway into collective reflection. Participants also improvised: some split stickers to express multiple viewpoints; others layered them to signal ambivalence. These gestures indicated a preference for complexity over simplification and a relational attunement to coexisting perspectives.

Emergent themes clustered around identity, collaboration, and responsibility. Many reflected on privilege and personal positioning as context-dependent; others emphasized team dynamics collective responsibility, mutual respect, equitable collaboration. A recurrent strand concerned ethics, stressing accountability to users, stakeholders, and the environment. Together, these threads suggested a professional consciousness in formation, where participatory reflection deepens awareness of self and system.

Participation skewed toward students, with strong European and Asian representation, mirroring the university’s multicultural context. Identity reflections framed education, color, ability, language, and social status as both privileges and potential exclusions; gender and sex appeared most often as axes of structural oppression. Personal and professional positioning (Figure 5) is distributed widely along dependency–autonomy, indicating fluid rather than fixed identities. Mapping designer archetypes showed balance across quadrants, evidencing heterogeneous practices and mindsets. Design drivers were predominantly social, then economic; political drivers were marginal. Team-role recognition was broadly balanced

across creative, managerial, and relational functions, with fewer analytical profiles.

Perceived designer power (Figure 6) was notably high, awareness of agency and influence, without a proportional engagement with responsibility. External stakeholders appeared mostly as participants or users rather than empowered co-designers.

Visually, the accumulating stickers formed a collective self-portrait, a living data visualization of shared introspection. Operationally, the installation required ongoing care (material replenishment) and faced uneven engagement across disciplines. Still, participation showcased the potential of informal, anonymous formats to involve diverse audiences and foster designerly consciousness with non-institutional, low-tech means. Limitations include a context-specific, self-selected, anonymous sample, preventing profile-based analysis (e.g., student vs. professor). Findings are thus indicative rather than generalizable, offering transferable insights for comparable educational or professional settings.

6 DISCUSSION

The Guerrilla Research Action (GRA) demonstrates how participatory design’s democratic ethos can be translated into an everyday micro-infrastructure for reflexivity. Rather than convening reflection as a scheduled activity, the intervention relocated self-positioning into an ordinary corridor and made it publicly legible while preserving anonymity. In doing so, it turned everyday passage into a low-threshold encounter with accountability: participants could register where they stand, see how others respond, and recognise that positions are distributed, contested, and co-produced.

A central contribution lies in showing reflexivity as an environmental condition rather than a discrete moment. In design education and professional practice, reflection is often framed as



Figure 6: Results from the “My Power within the Design Process” and “Stakeholders’ Role” prompts.

a post-hoc stage (a debrief after action). Here, reflexivity was embedded as a spatial-temporal affordance that could be activated in seconds or sustained across repeated encounters. The posters, the progression of prompts, and the cumulative traces worked together as an “infrastructure of attention,” where reflection remained available, brief or deep, solitary or shared, without requiring facilitation. This suggests that designerly reflexivity can be cultivated not only through structured dialogue, but also through situated cues that sustain awareness over time, especially when participation is voluntary, embedded, and visible.

The intervention also clarifies how power literacy can surface through micro-gestures [20]. The most telling interactions were not only the sticker placements, but the ways participants altered the format: splitting marks, layering, annotating, or producing ambiguous responses. These gestures made visible how positions are negotiated within systems of privilege, expertise, and collaboration, without the need to explicitly name roles or impose interpretive frames. Importantly, agency was redistributed across participants: with no moderation, the installation produced an egalitarian reflective field in which meaning was generated through accumulation and juxtaposition. As a methodological implication for PD, low-threshold participatory mechanisms can externalise structural dynamics that often remain implicit, enabling transparency and empathy across institutional hierarchies while reducing the barriers to speaking up.

A further implication concerns the interdependence of inner and outer transformation. By prompting participants to locate themselves within broader systems, the GRA linked personal awareness to systemic conditions, foregrounding positional accountability: a recognition of one’s influence, constraints, and complicity. This

resonates with work on inner-outer change, which argues that attention, presence, and mindfulness are not private virtues but enabling conditions for collective action and sustainability (Wamsler and Brink 2018). In this sense, the intervention supports the claim that systemic change is not only a matter of redesigning structures, but also of cultivating the capacities through which people notice, relate, and take responsibility within those structures. Finally, the collective traces demonstrate that plurality and cooperation can coexist without consensus. The posters did not converge toward a unified “answer”; instead, they staged coexistence through contradiction, overlap, and partial alignment. These dynamics echo accounts of pluriversal orientations in design [42] and rituals of cooperation [43], where difference is not treated as noise to be resolved but as a condition to be held and worked with. The installation therefore rehearsed a democratic competence that is often difficult to sustain in institutional settings: staying with plurality long enough for learning to occur, without forcing premature closure.

These observations indicate two practical contributions. Methodologically, the GRA expands PD by demonstrating how aesthetic and spatial arrangements can function as open-ended infrastructures for reflection, producing critical engagement through cumulative, embodied participation rather than through facilitated deliberation alone. The interaction can be read through behavioural design logics such as Cues-Actions-Rewards (CAR) [44], but with a distinct orientation: instead of steering behaviour toward pre-determined outcomes, the cues invite voluntary self-awareness and situated accountability. Pedagogically, the action reframed reflection as a shared cultural practice within the design university,

cultivating presence, ethical awareness, and sensitivity to positionality across roles and scales of action. In a context where designers must increasingly work across difference and uncertainty, such lightweight infrastructures may complement formal participatory processes by keeping reflexive attention “on” in the everyday.

7 CONCLUSIONS

This study explored how a Guerrilla Research Action can function as a participatory and reflexive environment within design education and practice. Findings suggest that informal, anonymous, and playful formats can effectively foster awareness of identity, power, and relational responsibility among diverse participants. By transforming a public walkway into a shared reflective common, the project shows how small-scale interventions can reconfigure everyday spaces into ecologies of dialogue.

- **Reflexivity as relational practice.** Designing for participation requires designing for mutual recognition. Reflexivity is a collective competency that reduces micro-conflicts (e.g., unspoken hierarchies) and supports equitable collaboration.
- **Everyday infrastructures of dialogue.** Low-threshold, informal prompts embedded in daily life sustain attention and care over time, complementing formal co-design.
- **Plurality for coexistence.** Allowing ambiguity and disagreement to remain visible, without forcing resolution, rehearses coexistence and strengthens democratic participation.

Future research could extend this work across institutional and professional contexts, examining how guerrilla or ambient reflexivity interventions operate in workplaces, civic environments, or hybrid spaces. Longitudinal studies could explore how ongoing encounters with reflective interventions shape relationships, awareness, and shared responsibility over time. Comparative trials (linear vs. clustered dramaturgies; physical vs. hybrid) could clarify which configurations deepen dialogue and coexistence across diverse publics. Ultimately, this project affirms that designing for reflection is designing for coexistence. When designers create the conditions for people to pause, position themselves, and acknowledge interdependence, they lay the groundwork for more conscious, relational, and caring design cultures.

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The Role of Design in Post-participatory Research and in Framing processes' Legacy

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Abstract

Although the role of design in participatory processes related to urban transformation has been extensively studied, most of the literature focuses on tools and methods to facilitate participation. Studies that have analyzed the role that design can play after the conclusion of participatory processes to strengthen their impact, therefore, seem rare. This contribution aims to explore the legacy of participatory practices as a new field of inquiry for design and to investigate design itself not only as a discipline but as a methodological approach to research grounded in participatory contexts. The paper notes that too often, at the end of the participatory process, both policymakers and designers seem unaware of the importance of the knowledge produced through the process itself. This lack of awareness leads to the inability to systematize the legacy of completed processes and, among other things, forces subsequent initiatives to start from scratch, underlining an extractive logic towards citizens. The paper proposes treating these legacies as networks of trajectories, outcomes, and effects that constitute a wealth of knowledge. Legacy, therefore, should be analyzed, framed, and assembled to form part of the interpretative framework needed to counter the disruptive effects of neoliberalism. Within this research horizon, research-through-design is proposed as an operational paradigm capable of transforming analytically produced knowledge into situated, embedded-in-practice knowledge, thereby enabling its pragmatization. In doing so, design may extend its contribution to civic life beyond strengthening deliberative processes, assuming a central role in addressing challenges confronting contemporary Western cities.

CCS Concepts

• General and reference; • Design;

Keywords

post-participatory research, research through design, participatory urban planning, post-participatory research, research through design, participatory urban planning

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1 Introduction

Over the past three decades, Western cities have undergone processes of deindustrialization and globalization [38].

Large swaths of productive land have been left vacant as manufacturing was offshored, production systems evolved, and a knowledge-intensive service economy took hold. Likewise, rail yards and corridors that were originally sited on the urban periphery in the post-World War II period have since been absorbed into the consolidated city, creating renewed pressure to relocate these infrastructures to the urban fringe. To bring about these urban transformations—of which examples above are merely illustrative—requires massive investment, typically mobilized through private capital [43]. This dynamic has prompted city leaders to engage in intense competition to secure funding and align with investors' growth expectations. In turn, the need for private financing often leads municipalities to site new facilities primarily on economic criteria, rather than on careful assessments of their urban and social impacts on the city's development [27].

Alongside the progressive deregulation of investments, the minimization of state control over financial flows, and the shift from an economic to a financial model of real estate, the way cities have always been built and rebuilt began to change. The supposed impossibility of limiting capitalist speculation opens the door to phenomena such as planning deregulation and the development of management systems for urban growth based primarily on market mechanisms [37].

These phenomena, for a long time out of the public eye, are today well known to everyone, and it is finally clear that they are among the most important causes with tremendous consequences for urban space and citizens' lives [9]. Indeed, from Istanbul [46] to Milan [65, 79], from Madrid [20] to Beograd [36, 75], the effects of the neoliberal approach [3, 11, 41, 69] are now tangible. Gentrification, social segregation, the transformation of public space into commercial space, and the exclusion of low- and middle-income populations from renovated residential areas are just some—although the most visible—effects of the neoliberal way of imagining and planning cities [24, 70, 77].

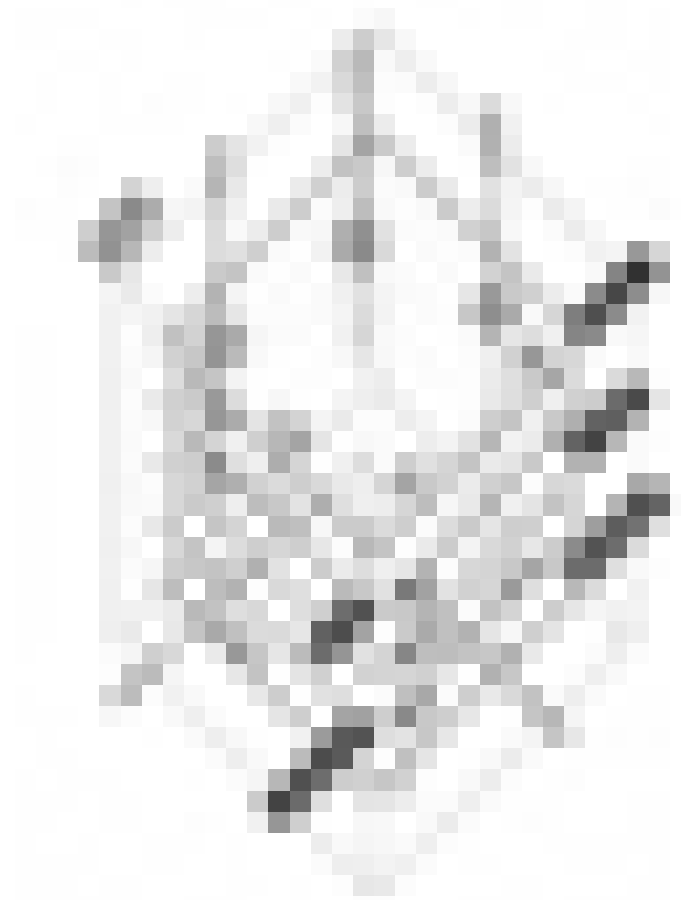


Figure 1: Schematic representation of the city’s layered complexity as a place, a space of interaction, and a field of research [Courtesy Pietro V. Ambrosini]

Alongside the dynamics outlined, collective mobilizations have emerged, sometimes bottom-up, sometimes top-down. Participatory planning, although already in use in the 1960s, expanded in these settings, supporting processes led by public authorities as well as those promoted by private, non-profit, or independent organizations to shape citizen involvement in urban transformation.

On the one hand, indeed, participatory processes have played a fundamental role in spreading a new awareness of the importance of citizen involvement in urban development. Among others, Giancarlo De Carlo [21], Randolph Hester [44], and Patsey Healey [42], have explored how planning has improved thanks to citizen involvement and the valorization of their experience, and how it has spread thanks to its ability to reveal hidden local resources and promote a sense of democratic inclusion. On the other hand, however, it is becoming clear that in many neoliberal contexts, participation has become an industry that intersects with planning

professionals [4] or even a useful means of pursuing the goals of capitalist real estate development [67].

In the strong belief that the higher degrees of citizens’ participation, namely partnership, power delegation, and control [1], represent the most important antidotes to neoliberal excesses, it is now essential to explore new roles for design and designers in planning. We will therefore propose and explore the possibility of shifting the focus from the role of design within and during participatory processes to its role after the processes have concluded. In other words, the present contribution is an attempt to view design not as a vertical discipline but as a method for conducting research through participatory processes, with the aim of reassembling knowledge about the city and strengthening the processes used to govern its transformations.

2 Participatory processes that deal with urban transformations

What we mean when we refer to participatory processes concerning urban transformations is, for example, both processes understood as participatory urban planning that focus on the territorial scale [71, 72], and those concerning small areas and/or the regeneration of abandoned places [6].

We also refer to the entire range of initiatives that can be considered participatory, regardless the degree of citizen involvement planned and achieved. We also consider, in the same way, processes carried out by directly involving citizens and those carried out with the participation of intermediary bodies of representation [18, 19, 56]. We therefore mean a wide range of initiatives, assuming they share the aim of creating a real space for authentic dialogue [76] to foster the possibility of influencing policy-making processes regarding urban transformations.

These processes can be organized and conducted in significantly different ways and can occur at many stages of the planning, design, and construction cycle, addressing different topics and objectives, with varying levels of political awareness. Some involve residents and civil society organizations from the outset, while others sequence their involvement across distinct phases. Many are structured into phases ranging from initial deliberation to scenario definition and option evaluation, and others are designed to inform citizens and involve them in deliberative decision-making. In some cases, outcomes are specified in advance, placing greater emphasis on information provision and consultation, while in others, citizens are allowed to collaborate to set the outcomes and exert substantial influence on decisions and policy development. However, regardless of their specific characteristics, they all share a common goal: to contribute to the decision-making processes regarding the regeneration of urban space, urban development, and the adaptive reuse of abandoned sites and infrastructures.

Researchers and practitioners have been continually engaged in seeking tools and methods to launch workshops and actions, improving citizen engagement, enhancing the accessibility of these urban laboratories [60], and understanding how, during the process, the public gathers around emerging issues [45, 48, 54]. Among others, Dyer et al. [25] and Picken [74] note that much of the literature has focused on expanding access to urban planning processes for new actors.

In recent years, many scientific contributions have been produced in Italy that are playing a significant role in highlighting: the importance of these processes in developing citizens' capacity for self-organization in undertaking various forms of action by drawing on their own creativity [80]; the growing importance of promoting people's involvement for more equitable urban development [15]; the development of a wide range of design-based methods and design-driven workshops to empower the massive co-design [63].

This focus shows the importance of community voices and contributions in urban development, but although the people who collaborate in the design, improvement, and management of viable solutions for new (and sustainable) ways of living [62] are the main resources of a meaningful participatory process, if the goal of participatory design is to contribute to the necessary change in the way contemporary urban development is managed, then it is

necessary to start looking at these resources as precious mines that produce knowledge about the city.

Today, participatory processes are widely explored as spaces where democracy can be learned, yet they are rarely considered places where valuable knowledge can go beyond the project's specific objective. This lack has inevitably led to an underestimation of the quality, impact, and importance of such knowledge, which is often produced by those who take part in assemblies not only for the purpose of making a decision, but with the aim of framing and addressing the real issues and concerns [51] of those participating in the process itself.

In many cases, indeed, participatory processes on urban transformation allow the municipal administration to gather information and involve citizens in decision-making, sometimes, unfortunately, with the ill-concealed aim of shifting the responsibility for politically uncomfortable choices onto the process itself. It is also known today that in some situations, citizen involvement serves the sole purpose of building coalition policies and strategic alliances in areas undergoing political and socio-spatial restructuring, to legitimize their own powers, assert control, and gain support to implement ongoing plans without opposition [39, 40].

In the end, however, value is given only to the choice made, the community built, and the solutions identified, but the work of analysis, opinion exchange, discussions, and elaborations carried out by the community around issues is not valued and is lost.

At the end of participatory processes, the question *What happens now?* remains unanswered, and there seems to be no awareness of the importance of the knowledge produced by the process, not only for addressing the process's subject but also for addressing other urban challenges. Furthermore, there seems to be no interest on the part of academics as well as in public administrations, policy, and decision makers in finding ways to design tools and methods to collect, analyze, and make available and usable for others, in other contexts, this wealth of data, issues, concerns, expectations, relationships, etc. that the process has produced.

This lack of attention to systematizing the legacy of completed processes is also one of the factors that forces subsequent participatory initiatives to always start from scratch in collecting data, ideas, and facts, emphasizing an extractive logic towards citizens. This situation contributes to the perception that processes are long-term efforts that rarely produce tangible results, that they always address the same issues of little interest, and that participation is therefore a waste of time or an activity only those with excess time can afford.

2.1 The legacy of participatory processes

City and, more intensively, governing the transformation of urban areas are becoming wicked problem [12, 78] in the sense that they are complex, systemic, interconnected, and urgent, requiring insights from many perspectives and in the sense that they are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing [16].

Participatory processes in urban transformation can be seen not only as a means to democratize decision-making and urban administration, but also as spaces where, through discussion of

specific aspects, broader, more complex issues are addressed. In other words, places where, starting from well-defined and delimited objectives (repurposing a square, imagining the future of a youth center, etc.), the processes of discussion that are activated produce knowledge and legacies useful to the city as a whole.

From this perspective, the participatory processes promoted in a city can therefore represent those indeterminate areas of practice, those places where the issues, investigations, and socio-technical relationships that make up complex problems, or the network of issues involving actors and activities that shapes the complexity of the city, are analyzed not only to find a solution to a problem, but above all to develop knowledge that allows the different aspects of the complex problem to find space to be continuously managed, negotiated, and guided over time [47].

Participatory processes and their legacies engage wicked problems that entangle material and social actors: communities and relationships, as well as buildings and mobility; social infrastructures alongside architectural and engineering ones. In this light, citizen participation should be approached as dynamic and evolving: it calls for continually re-politicizing the issues at stake and for broadening and diversifying both the range and the number of actors and viewpoints involved [22].

The legacy of participatory processes on urban transformation can therefore be understood as a network of trajectories, results, and effects that constitute a wealth of knowledge produced by focusing on a specific aspect of a broader problem. This legacy could be analyzed, framed, and assembled to become part of the knowledge base on the city and its complexity, also with a view to forming part of the interpretative framework needed to address the problem as a whole. The visions, ideas, concerns, and issues that the community of a participatory process has brought to light in an attempt to collaborate on the reuse of a public area in the neighborhood are often treated as insights, problems, and difficulties specific to that community and place. Instead, considering them as a legacy that can be transformed into a wealth of stable knowledge, usable as a resource for future urban decisions, could strengthen the sense of participation today.

In other words, places of participation could be not only spaces designed to be part of a community that solves problems, but also places where that legacy is produced, which, transformed into a wealth of knowledge about the city, contributes first and foremost to defining what the problems are and, only then, imagining solutions and new ways of collective decision-making.

In this paradigm shift, a new role for design in participatory processes is envisaged.

What we mean by the term legacy of a participatory process is the extent to which time and the relationships established within the ecosystem remain visible once that ecosystem's life has come to an end.

Legacy, in other words, is what has emerged from the participatory ecosystem and found a tangible, visible form of existence. It is composed of concerns, visions, problems, and ideas, structured by and through the relationships among all the actors — human and non-human, objects and actors, the networks themselves—which are made and kept visible by design.

The structuring of this legacy, which can also be expressed as the act of creating the narrative of the participatory ecosystem, could

places design, as a subject, a profession and a discipline, in its pre-eminent condition, that is, it conceives it not as an activity aimed at determining the functional and aesthetic qualities of objects, but as a set of iterative, collaborative and experimental practices oriented towards the formulation and construction of solutions for wicked problems [17, 78].

A different role, therefore, could be seen for design. No longer focused on designing innovative tools and methods to enhance decision-making, but rather a stronger commitment to searching for new theoretical and practical frameworks that allow legacies to become heritage, as well as a specific attention on ensuring that knowledge produced remains visible and relevant for every other decision-making process regarding urban development.

In other words, what participatory design needs when incorporated into urban transformation is a new awareness of the importance of playing a role in what occurs at the end of a participatory process or in the folds of the various processes a city promotes. Design already plays different roles in fostering the community's ability in self-design and self-build themselves [29]; involving citizens in processes organized in different ways to discuss, advocate, and deliberate about the future of their cities [5]; developing guidelines to strengthen the power of temporary uses in urban regeneration also minimizing the risks that they result in merely support neoliberal policies [33]; but what is today proposed to counter imbalance of power is a focus on enhancing and sharing the heritage of knowledge produced in the processes involving community.

The new design paradigm in participatory processes would therefore carry strong political connotations. It would become aware of the need to shine a spotlight on the conflicts that various issues bring to the fore, with the aim, on the one hand, of helping to design new tools and methods that lead to their resolution and, on the other, of playing a role in defining the new frameworks of meaning that are necessary today so that urban planning can ensure the right to the city [55] and to a just city [27].

This new paradigm should be developed with awareness of the importance of the post-participatory phases of the process and, therefore, could serve as an infrastructure to address three distinct needs while maintaining them interconnected and closely aligned with the process itself.

The paradigm should therefore contribute to: 1) finding tools to record, collect, and catalogue the different types of knowledge that a process generates, not only in terms of individual entities, but above all as a network; 2) imagining ways to enhance these pieces of knowledge produced by the processes, giving them the form of a legacy; 3) Integrating this legacy into the knowledge base needed to make decisions about urban transformations so they remain visibly stable and, at the same time, reworkable [28, 68].

3 FRAMING POST-PARTICIPATORY RESEARCH

3.1 The design method

Awareness of the role of design in framing the post-participatory research scenario could lead scholars to investigate the wealth of knowledge produced by the community gathered around participatory processes, not only in terms of solutions found for that specific

Table 1: Experimental paradigm to shape the legacy

Number	Phase	Objective	Tools
1	Recording	Capture and document the widest possible range of traces from the process (actions, conversations, artefacts, atmospheres, people,...)	Audio recordings, fieldnotes, photographs/video, sketches, collected artefacts, observation protocols
2	Framing	Select and frame the relevant materials: identify what is meaningful, recurrent, or revealing within the broader collection	Transcription, tagging/coding, thematic clustering, text analysis, selection criteria, preliminary schematization
3	Reassemble	Establish relationships between selected elements: build a sequence, or a logic, order	Affinity mapping, timeline building, conceptual mapping, brainstorming and sensemaking sessions
4	Emergence	Let insights and patterns emerge through iterative re-organisation and interpretation, moving from fragments to an overall sense	Iterative synthesis, relational diagrams, pattern finding, memo writing, reframing sessions, cross-reading
5	Narrate	Make the legacy visible by translating the synthesis into a coherent, communicable narrative and tangible outputs	Writing, visualisation, exhibitions/installations, publications, interviews, curated archives, public dissemination formats

challenge, skills and relationships enhanced by those specific people, but also in terms of cultural constructs of the future-present [57, 73], matters-of-facts and of concern [50, 52], ways through which socio-technical assemblages and publics were (or were not) assembled and infrastructured [2, 13, 23, 45, 48, 51, 54, 61, 66], external entities and ways of framing actor and network [14].

Analyzing the heritage of knowledge produced within participatory processes to make (and maintain) it visible at the end of the process offers a paradigm that still collocates participatory design as a means for social innovation [58]. Design in participatory processes of urban transformation can indeed be seen as a highly dynamic process in which the designers' role includes mediating and facilitating co-design activities aimed at triggering social innovation and making things happen [26, 58].

Based on insights from prior professional experience and the ongoing research project *City as a Layer*, the design act of reworking the complex elements emerging from the participatory process could be carried out in five phases.

The first phase requires using methods and processes to record, i.e., create a memory of the process and its components. Tools and methods for reporting in participatory design processes are already available and could be useful for this task.

The second phase requires selecting memorable events from the corpus of registered events to establish a before-and-after, i.e., a timeline.

The third phase is the core of the *réassemblage* of the legacy and consists of developing a meaningful construct among the memorable events (temporal, cause-and-effect, or iterative). This phase leads, and sometimes iterates with, the fourth, which clarifies the meaning revealed by the system as a whole, i.e., developing the project that underlies the process.

Finally, the fifth phase requires creating a narrative capable of conveying the complexity of the process and project and, at the same time, recreating those elements and moments in which the

participant recognizes themselves, thereby maintaining their interest and prompting action to keep their legacy visible.

3.2 The transdisciplinary approach

The experimental paradigm proposed above highlights the role that participatory design has played since the discipline underwent a conceptual shift in 1999, taking on a role in the creation of socio-material assemblages [50]. In addition to its role in involving people in the conception of new products, participatory design has since become a constellation of initiatives aimed at building socio-material assemblages for and with project participants [59]. Over the last quarter of a century, the role of designers has therefore gradually become that of collaborators in the construction of “a meaningful and potentially controversial assembly, for and with project participants” [26].

Following this tradition, the research approach needed to understand and contribute to post-participatory research consists primarily of investigating the multiple levels through which the legacy of participatory processes can shape urban transformation, be reworked into heritage, and be made accessible. Investigating these three main assets, after all, means investigating the issues that constitute the complex problem of the city and urban transformation in the contemporary era. An investigation for which the use of single disciplinary paradigms and modernist scientific approaches no longer seems sufficient.

The adoption of a transdisciplinary approach [7, 32], for the reasons mentioned above, is therefore necessary in order to develop an interpretative framework capable of articulating this heritage. A body of knowledge produced during the process, disciplinary and experiential knowledge, products created by professionals, elected politicians, officials, and citizens, which, if organized to maintain visibility, can become the reference framework capable of making operational the multiple disconnected layers that make up both the legacy of a participatory process and the complexity of the city.

In undertaking this challenge, Actor–Network Theory (ANT) [13, 50, 51] thus seems to offer a useful framework for establishing the rassemblement of meaning, for taking objects and their materiality seriously within participatory political and deliberative processes, and for shifting attention from what things are to what things do.

This theoretical framework can be used to analyze how visions of the future, concerns, mediated issues, and networks of meaning created during the participatory process enable, limit, and reconfigure, at the end of the process, not only the specific objective of the process itself, but above all the collective action that takes place in the city. It could be operationalized through the adoption of constructivist grounded theory.

The ontology and epistemology of this method (a contemporary review of Glaser and Strauss's grounded theory [34]) indeed assume that we produce knowledge by grappling with empirical problems. Knowledge rests on social constructions. We construct research processes and products, but these constructions occur under preexisting structural conditions, arise in emergent situations, and are influenced by the researcher's perspectives, privileges, positions, interactions, and geographical locations [64].

In this research context, research-through-design provides the operative paradigm: it enables knowledge produced by analytically oriented scientific disciplines to be transformed and operationalized — engaged and embedded in practice — thus effecting a pragmatization of knowledge.

Proper research-through-design (RTD) [30, 35, 49] can be defined as project-grounded research: as a kind of research about design [more] relevant for design, or as a kind of research for design that produces original knowledge with as rigorous standards as research about design. In other words, in project-grounded research, research goes beyond the immediate output of the design project and focuses on anthropological issues and social impacts related to how individuals and communities wish to inhabit the world, and on reflection on design practices with the aim of contributing to design knowledge [31].

Applying the RTD paradigm to the analysis of the legacy and knowledge produced by a participatory process could allow design to offer an alternative paradigm for imagining, planning, and bringing into being possible and desirable futures, while advancing new, plural models for research and education [8, 10, 31]. This methodological paradigm could also allow the knowledge produced by analysis-oriented scientific disciplines to be transformed, correlated, and incorporated into the legacy of the process, just like any other element constituting that legacy.

4 CONCLUSION

Shifting the emphasis to the 'aftermath' of these assemblages and highlighting the importance of collecting and analyzing the knowledge they produce represents a promising field of research for participatory design in urban transformation. It is a distinct, perhaps new, perspective, situated in the interstices of the various disciplines involved in urban transformation.

A vision that seeks to respond to Latour's appeal by proposing a political role for design.

A role in which authorization and legitimation procedures are important but represent only half of what is necessary for the assembly. The other half lies in representing, authorizing, legitimizing, and bringing those very issues, the ones that matter, that create an audience around them, into the relevant assemblies [53].

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What Happens to Shared Visions? Surveying the Literature for Strategies to Preserve and Disseminate Participatory Futures

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Abstract

Participatory futures (PF) projects that aim to redirect and reimagine systemic challenges are gaining traction across many different contexts. Similar to participatory design (PD) practices, PF projects involve participants co-creating shared visions of a better situation, though PF positions these future states as much longer-term. We are interested in understanding what happens to these shared, long-term visions, because they could be a valuable artifact to act with. Yet most futures workshop structures discard the long-term vision at the end of the engagement, rather than preserving it as a valuable artifact and outcome. This paper reviews PF literature across multiple disciplines with a focus on the forms that visions take and how those visions are shared following workshop activities. Through our assessment of 222 papers, we found that only 13 papers documented and clarified how and why the visions were carried forward. Based on this review, which builds on previous PF reviews, we identify three primary goals for vision-sharing: *extend the audience*, *offer new perspectives*, and *motivate wider action* toward a better future. Drawing on insights from our final set of exemplar papers, we propose that researchers and practitioners can better leverage the potential of form-giving and vision-sharing to lead to action following workshop activities.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design.

Keywords

participatory futures, design futures, visioning, co-creation

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1 Introduction

Participatory futuring (PF) activities are joyful and creative ways to gather and develop diverse perspectives on the past, present, and future of a challenge. Over the past two decades, there has been an increase in engagement of broader publics in futures thinking, particularly through participatory methods [15]. PF co-creation workshops that aim to shift the future trajectory of an issue are used in various fields, including ecology, city planning, and emerging technology. As Ramos et al. [54] state, PF “aims to democratize and encourage long-term thinking, and inform collective actions in the present.” Exploring future possibilities through hopeful visioning about long-term outcomes and their impact can inform strategic directions.

However, much of the documentation about PF projects fails to describe how co-created visions are shared with a wider audience beyond the workshop participants following the activities. This absence suggests an assumption that collective imagination is reserved only for those directly engaged in such activities. Participants themselves will hold a shared vision and a changed perspective on pathways forward, yet this new knowledge and motivation may not translate to others. This lack of dissemination and translation may limit the potential to effect lasting change beyond the workshops that are typically part of PF projects. Therefore, we survey the contemporary literature to ask: What happens to co-created visions following PF activities? This research question examines the staying power of workshop visions to endure beyond the moment of co-creation, aiming for a more lasting impact.

In this literature review, we sought to clarify and organize the form-giving practices for visions that are created and shared. We gathered papers through the search terms “participatory futures,” “collective imagination,” and “co-speculation.” Additionally, in the past eight years, there has been substantial research about PF as a body of literature and community of practice [4, 5, 14, 15, 20, 22, 29, 32, 35, 38, 46, 54, 59, 63]. These reviews focus on the strengths of PF approaches, imperatives for PF work, recommended PF practices, and questions about the impact of PF. With our contribution, we draw on these works and narrow our focus to the form-giving and vision-sharing component of futures activities.

2 BACKGROUND

Participatory futuring (PF) methods seek to expand the range of people invited to shape the future, thereby democratizing access to future thinking [8, 11, 19, 26, 41–43, 47, 49]. PF workshops bring people together to debate and envision a better future, then develop actionable pathways toward sustainable and equitable futures. Ollenburg [48] defines PF practice as inherently oriented

toward change-making as “a normative and dialogical process in search of social transformation.” Furthermore, Gidley [25] positions PF as a process that “facilitates empowerment and transformation through engagement and participation,” enabling participants to gain greater agency toward their individual or shared futures.

Participatory design has always been oriented toward exploring “alternative futures” by fostering democratic change [17]. These participatory approaches prioritize the active co-creation of designing more desirable futures [55]. Light [39] has addressed the politics of anticipating and creating futures, and previous PDC conferences have featured situated action involving “prototyping futures” of more-than-human sustainable smart cities [12]. While participatory design often collectively imagines a shared future, that future is typically a near-term vision. In contrast, PF focuses more on long-term visioning. This paper focuses on long-term future visions that stretch our thinking beyond the next five or ten years rather than the near-term future visions created through most design practices.

The foundational “Futures Workshop” structure, used in both PF and participatory design, employs collective practices to imagine a preferable future vision and then identifies immediate next steps to move closer to it [16, 37, 60]. Compelling visions motivate people toward change by creating tension that increases our dissatisfaction with the present, making us more willing to move toward something better [33, 61]. However, the Futures Workshop structure does not prioritize the creation of stable, ongoing visions that last beyond workshop activities. We propose that this represents a missed opportunity to leverage the aspirational visions that communities envision for themselves.

Our focus is on how PF projects seek to give form to co-created aspirational visions, making them tangible so they can last after the workshop. These representations could take on many manifestations, such as how the Civic Imagination Project describes “the worldbuilding process focuses on harnessing the creative energies of invested groups to conjure shared visions of complete worlds [...which] might then take multiple forms—novels, comics, games, virtual reality, audio dramas, etc.” [52]. The tangibility of visions brings ideas from conversations forward into further debate, transporting an imagined future into the present and laying a foundation for further development and action [13]. The creative use of form-giving increases an idea’s durability and translatability, offering new opportunities to explore alternative and critical futures [30]. Visions offer a narrative and creative way to understand a challenge and express hope for change, especially for complex issues like the wicked problems many of these PF projects tackle.

3 METHODOLOGY

We conducted a systematic literature review [34] of the PF literature to understand how projects utilize the co-created visions after the workshop activities have ended. Between August and September 2024, and again in September 2025, we collected papers that described primary research projects related to the practice of participatory futuring. We used several queries to search EBSCO, Wiley, Taylor & Francis, ProQuest, and Google Scholar. We used these terms: “participatory futuring” (135 papers), “participatory speculation” (63), “co-speculation” (31), “collective visions” (11),

“co-imagining” (6), “bottom-up futures” (3), “collective futures” (2), and “public futuring” (2). Additionally, we identified an additional 66 papers from the citations of the original set. We reviewed all disciplines published in central databases, compiling 222 papers on participatory futuring and co-speculation. We used a combination of AI-assisted analysis (via the service SciSpace) and our own assessment. We then narrowed our focus to 72 projects that specifically created collective, aspirational visions. We analyzed those to identify projects where visions were described as actively shared following workshop activities. This resulted in a surprisingly small final set of 13 papers. (Note: A single project was described in two papers, but we count this as one paper for a total of 13 [1, 2].) With that set, we sought to understand why and how these projects shared co-created visions with broader audiences.

In this paper, we distinguish between two types of goals of PF activities: *co-creating* a shared vision and *gathering feedback* on a predetermined vision. This paper focuses on projects in which groups of people develop a shared future story, rather than those in which researchers develop a future story and invite others to respond to it, which is a significant portion of design futures research. Additionally, this study focuses on realistic and aspirational visions of the future rather than fantastical concepts untethered to earthly constraints. We also focus on *preferred* future situations rather than just plausible or possible scenarios. Therefore, we focus only on papers and projects that engage a diverse group of people in imagining an aspirational future together.

4 Findings

With our 13 final papers, we cataloged how each vision was given purpose beyond the workshop, focusing on the form it took, who it was shared with, and for what purpose. (See Figure 1)

4.1 Diversity of forms

Visions need to be given form in order to be shared, whether through text, images, multimedia, or enactments. We found a surprising diversity of forms in the final papers. Particularly creative and engaging approaches included a radio show [2], a magazine [18], videos [7, 56], and paintings [36]. In most cases, after the initial ideas were co-created in participatory workshops, researchers asked a smaller, specifically skilled set of people to give form to the shareable vision, rather than maintaining continuous collaboration with the whole group. For example, Gerber [24] created props based on the participants’ co-created collective visions, and Johansson et al. [36] commissioned artists to create paintings from the collective visions.

Researchers sometimes describe the rationale behind form choice and the process of form-giving [2]. Yet they rarely discuss the impact of form and its potential as a powerful means of persuading people to pursue better futures. Exceptions are Pollastri et al. [53] who facilitated the co-creation of fictional topographic maps of future cities—a form imbued with complexity and incompleteness to “leave room for subjective interpretations and questions.” Similarly, Baumann et al. [7] chose video because it is “particularly powerful for visualizing the more nebulous concepts and for additional community recruitment.” To continue exploring the translation of visions into shareable formats, there may be more to learn about



Figure 1: Chart detailing the final set of 13 papers with descriptions of how each vision was shared—focusing on the form it took, who it was shared with, and for what purpose

form-giving from non-participatory design futures, where compelling, high-fidelity images and objects provoke designer-driven ideas about the future (e.g., [3, 10, 31, 44]).

4.2 Purpose of sharing visions

We sorted the intended purpose for sharing vision into three categories: *‘extend the audience,’* *‘offer new perspectives,’* and *‘motivate wider action,’* all of which include additional subcategories within each.

4.2.1 Extend the audience. In eight of the final set of papers, the goal of sharing visions was explicitly stated to ‘*extend the audience*’ of the projects by enabling more people to participate in discussions and interactions. Within this category, we identified three subcategories of objectives: ‘*foster discussion*,’ ‘*encourage public participation*,’ and ‘*support inclusion*.’

All of the projects had a goal of sharing visions to ‘*foster discussion*’ [2, 7, 18, 24, 36, 50, 53, 62]. Within this goal, we see variation and creativity in the choice of form for the shared vision, designed to intrigue participants and provoke conversation. Through a series of participatory workshops, Elsden et al. [18] created a fictional, local, cultural magazine “designed to stimulate conversations about equitable and sustainable digital futures in performing arts festivals.” Researchers mailed 500 copies of the magazine to people who work with cultural institutions and artist collectives to “shift and inform present conversations.” This magazine serves as a platform for exploring various stories and ideas about the future of festivals and the role of digital technologies.

Anthoni et al. [2] fostered discussions with broader audiences through a radio show, *20:30 Brussels Talks*, about the future of Brussels, in which residents used sustainable and inclusive strategies to address climate change. By facilitating a series of five co-creation workshops and guiding additional development with artists, they designed a participatory process to “trigger imagination and conversation on what we want for our cities,” co-creating a future fiction that serves as a “tool to evoke change.” This “talk show of the future” continues to live online so that new audiences can “hear people from the future sharing about their lives, hopes and fears” [65].

Baumann et al. [7] were influenced by the participatory design concept of engaging with publics [9] when carrying workshop outputs forward past the workshops themselves. Researchers presented seven design fiction collages and one final video to a local planning committee of stakeholders to “to provoke dialogue about long-term strategies for developing new technologies” that serve the common good and reinforce local identity in a historically black neighborhood in Los Angeles. The organizer of the community group stated that this was “the first time I’ve seen [the university] do something significant... where urban planning and community values and taste are brought together.” This project was part of a larger “constellation” of participatory activities that explored other creative forms, including games, gallery shows, and “urban furniture” [6, 57]. In another project, Gerber [24] created a “scene” featuring backdrops and props for each of three distinct futures of public safety, co-created through a series of workshops and conversations with community members in St. Louis, Missouri. During a culminating exhibition and event, participants were invited to take part in scenes, playing the role of a public safety official. Members of the public were prompted to consider which elements they would want to exist in the future.

We created one subcategory, ‘*encourage public participation*,’ for projects that explicitly stated the goal of engaging wider publics. With their fictional topographic maps and scenarios, Pollastri et al. [53] sought new types of conversations that would allow “controversies, diversities and conflicts” to engage different groups of people in thinking about future urban living in the UK.

In an effort to intentionally expand the types of people they engaged beyond their initial workshops, Johansson et al. [36] specifically sought to include people who could not read or write in future visioning processes, an approach we labeled ‘*support inclusion*.’ These researchers used participatory approaches for “co-creating future visions with farmers and pastoralists that are currently engaged in agroecological practices.” Researchers then commissioned artists to create paintings depicting those visions of sustainable agroecological futures in Tanzania. With these approaches and the resulting paintings as artifacts, researchers sought to provoke dialogue about long-term strategies for developing sustainable food systems.

4.2.2 Offer new perspectives. Our second category, ‘*offer new perspectives*,’ builds on the goal of democratizing participation to more intentionally change people’s awareness and ideas about a given topic, specifically the future of that topic. Researchers create conditions to support reflection and critical thinking through a range of design activities. Within the final set of papers, we made six subcategories of the researchers’ goals: ‘*obtain feedback*,’ ‘*raise awareness*,’ ‘*increase futures thinking*,’ ‘*generate ideas about the future*,’ ‘*shift perspectives*,’ and ‘*develop new knowledge*.’

Four projects sought to ‘*obtain feedback*’ [26, 36, 50, 58]. Gidley et al. [26] succinctly state that the goals of their scenario thinking workshop were to discover what community members thought about climate change adaptation, explore the complexity of those issues through dialogue, gather ideas for adaptation, and build awareness of the possibility of multiple future paths based on action and inaction. Researchers gave the co-developed workshop scenarios to two local writers, who then created more detailed scenario stories. Community members provided feedback on these stories during a one-day workshop. Following the workshop, the scenario stories were provided to participants so they could continue discussions. The stories were included in a report that was distributed to local schools, community groups, government agencies, and business organizations.

Pargman et al. [50] sought feedback on their “scenario skeletons” about the sustainability of future information societies in workshops with partners, policymakers, students, and researchers. They also interacted with attendees at a sci-fi convention in Stockholm to further develop the scenarios. Uwasu et al. [58] facilitated PF workshops focused on energy visioning in low-carbon cities. Following the workshops, researchers presented four co-created scenarios to citizens along with a survey to assess how open people in the present day would be to the needs and desires of future generations. They received over 400 responses to help them assess “whether ordinary people would support the opinions of future generations.”

Three papers sought to ‘*raise awareness*’ [28, 53, 56]. In a project focused on strategic visioning for a town in Australia, Gould [28] outlines that the vision took the form of an imaginary narrative plus an action plan and was presented to the shire council and the mayor. Pollastri et al. [53] shared co-created visions on the internet in the form of an atlas to “invite readers to explore uncharted spaces for further discussion” around livable cities. Researchers described the future visions as “explorative scenarios, rather than plans that provide clear directions or strategies” to allow space for uncertainty, subjective interpretations, and questions.

A goal of two of the projects was to broadly ‘*shift perspectives*’ of community members or leaders. Galderisi & Limongi [23] presented their co-created future vision of a peripheral region in southern Italy at an exhibition attended by stakeholders and open to all citizens through a public discussion. Their outputs included a hybrid systems-topographic map as well as a set of goals, strategies, and actions. Wikberg Nilsson [62] shared personas and scenarios with municipal leaders to “convey the insights gained and cultivate a shared vision and concrete action plans for inclusive and attractive service offerings and community spaces,” after which they succeeded in their goal when “the municipality chose to distribute resources more evenly across both urban and rural areas.”

Two projects shared the related intention to ‘*increase futures thinking*’. Baumann et al. [7] sought to “establish infrastructures of the imagination” for long-term strategies and alternative models of innovation. Sharpe et al. [56] used an animated video to help people “imagine the future” with fewer non-communicable diseases. In a related subcategory, two projects named the goal of helping the larger public by using workshops to ‘*generate ideas about the future*’, which were then shared more broadly. Elsdén et al. [18] sought to “support world building” around “equitable and sustainable digital futures in performing arts festivals,” and Anthoni et al. [2] wanted to spark imagination about future living in Brussels.

Finally, in Baumann et al.’s [7] project about imagining future urban technologies that serve the common good, researchers explicitly chose to ‘*develop new knowledge*.’ They shared visions with external audiences to prompt thinking about “formal and conceptual unknowns” and to “create shared vocabularies tied to local worldviews.”

None of the final thirteen papers specified a goal of *inspiring hope*, yet this outcome is described in the larger body of PF literature [59] and could be an important way to offer new perspectives. This may be an overlooked and underutilized beneficial outcome of vision-sharing. Participatory processes can foster shared personal and collective optimism, creating a sense of what Logie et al. [40] describe as “critical hope,” an outcome that can nurture resistance to negative discourses. These kinds of hopeful experiences can also strengthen interpersonal bonds and empathy, enabling collective imagination and novel thinking [59].

4.2.3 Motivate wider action. In the ‘*motivate wider action*’ category, we found that several projects aimed to facilitate motivation and inspiration, helping people clarify which actions to take (and avoid) to achieve a better future. We created two subcategories where the goal is to ‘*inspire action*’ [7, 26, 28, 56] and more specifically ‘*identify and influence action*’ [23, 26, 28, 50, 62]. We make the distinction here between general inspiration and specific action items because some papers mention both as goals. This finding aligns with previous scholarship that links PF to human agency. Ramos et al. [54] state that PF approaches increase futures literacy, which “becomes an important precondition for people to then act in new or different ways.”

Four of the papers sought to ‘*inspire action*’. Through their animated video, which can still be viewed online, Sharpe et al. [56] attempt to leverage increased awareness and futures thinking to drive behavioral change around non-communicable diseases. Gidley et al. [26] used co-created stories about a future impacted by

climate change to shift reactions from passive acceptance to more proactive, co-evolutionary adaptation.

Finally, five of the papers used vision-sharing to ‘*identify and influence action*’. Pargman et al. [50] sought to influence regional sustainability planning processes. In another paper, Gould’s [28] in-depth community-engaged project focused on creating a vision statement with a narrative that included “long-term, future-orientated policy options and consultation frameworks” for government planners and community members. Galderisi & Limongi’s [23] project about the future of development in a periphery area in Italy resulted in a “shared vision for local development, capable both of framing already existing initiatives and increasing synergies between individual initiatives and better directing them towards the pursuit of common objectives.” Wikberg Nilsson [62] shared their co-created scenarios and personas with municipal representatives to spark discussion about future city planning. They then obtained a commitment from the representatives to diversify and enrich services available to community members. More than a year later, the implementation of the ideas was ongoing.

4.3 Discussion

Projects that work alongside communities and groups for an extended period have more potential to demonstrate impact. With this literature review, we are only beginning to identify the mechanisms for how future visions can have an impact. Importantly, our final categories don’t address larger structural aspects, such as those in which success stems from being tied to a broader initiative and the inclusion of key stakeholders. It follows that those researchers focused on participatory visioning may focus on the early stages of Moore et al.’s [45] framework for social-ecological transformation, “preparing for change”, rather than the whole journey of taking action, navigating, and institutionalizing that enables system transformation.

We also acknowledge that researchers have different intentions and goals. As Barendregt et al. [5] state, “Not all participatory futuring processes aim for change in the same way, nor do they mobilize the same theory of change. Some processes explicitly aim to be transformative, while others may be more ameliorative.” Some emphasize futures literacy as the primary outcome, using visioning as a means to bring people together, but “the scenarios themselves are less important than the futures literacy developed using them” [15]. Therefore, researchers must be clear about their intentions; otherwise, processes will bog down because of “tensions between those who hold to the radical goals of institutional reinvention and those who believe piecemeal reform is their best hope” [27]. Moving forward, we encourage researchers to be clear and intentional about these aspects of PF projects.

5 Conclusion

Upon reviewing the literature on participatory futuring, it is evident that shared PF visions encourage people to think differently and intentionally about the changes they wish to see. To promote agency toward future decisions and create a shared understanding, PF methodologies gather desires for better futures and use those to strategize change, leveraging the intelligence of everyday people who are at the center of challenges. PF is a proven approach

to increasing awareness, building relationships, and influencing action.

After exploring what happens to collective visions after the workshop, we conclude that most workshops are not primarily designed to create a vision and share it with others, as evidenced by their subsequent lack of use. However, when visions are shared in creative or strategic ways, they take a variety of forms, including narrative storytelling through illustration and text, interactive public events, complex maps, and scenarios. These tangible formats bring the collective's ideas into broader use. That usage may spark new discussions, influence community perspectives and planning, or encourage more people to take action around a specific cause.

It is not an easy task to share visions with a larger audience. Researchers devote so much effort to the initial stages of visioning that there may be little energy left to preserve and share their visions. It is challenging to capture the attention of people outside the workshop. Additionally, visions aren't always compelling and cohesive enough to share—as evidenced in several of our final examples, where researchers brought co-created scenarios to artists and writers to make visions clearer, more tangible, and more compelling.

Despite these challenges, we believe sharing visions offers more opportunities for researchers and participants to contribute to systems change. Collective visions of ideal future outcomes, created through group activities and facilitation, ask people to think differently and specifically about the change they want to see [19, 21], advancing our thinking about the types of interventions that are needed. Visions of an ideal future are powerful because they make us more aware of what is not yet good enough about the present [33, 51, 61], and have the potential to increase awareness of systemic challenges. We encourage further and more refined use of PF methods that push beyond the boundaries of individual workshop activities and seek to bring about the better futures imagined by participants. We invite researchers to: take visions more seriously by giving them form, disseminating them, and turning them into active artifacts; connect visioning to purpose, intention, and a theory of change; and follow through to determine if and how the visions last beyond the participatory processes themselves.

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Soft Situationism and Urban Resilience

Participatory Design Against Tourism Massification

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Abstract

The impact of mass tourism is reshaping historic cities, amplifying socio-economic inequalities and eroding local cultural identity. In Lisbon, these pressures demand responses that extend beyond conventional urban planning. This paper positions participatory design as a transformative approach, framing the XAPAXAPA Colab initiative within genuine participation and soft situationism. Through collaborative practices rooted in local identity and creative experimentation, the project seeks to redistribute opportunities, strengthen community ties and challenge dominant development paradigms. The paper outlines a mixed-method approach combining ethnographic narrative collection, iterative visual and product design processes, and a planned qualitative–quantitative evaluation centred on a public exhibition, examining how participatory design can operate simultaneously as a methodological and political instrument in community-based urban contexts. Rather than reporting final outcomes, the study advances an argument for community-led strategies aligned with post-growth principles as pathways for resilience and equity in cities affected by tourism massification.

CCS Concepts

• **Social and professional topics** → User characteristics; Geographic characteristics.

Keywords

Soft situationism, urban resilience, tourism massification, community empowerment, community-based participatory design, post-growth, inclusive urban development

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1 Urban Tensions and Tourism Massification in Lisbon

The underlying issue addressed by this participatory design research concerns the urban context that characterises Lisbon. Like other historic cities, the quality of life in Portugal's capital is at

risk due to the massification of tourism. Both the country and the city increasingly position themselves as tourist destinations due to their favourable climate, natural and built heritage, and the diversity of material and immaterial culture. Although the exponential growth of tourism represents a significant factor in the national economy, the absence of regulation and alternative strategies by the responsible authorities has a detrimental impact on the sustainable development of this activity.

In the summer of 2024, Portugal reached a new tourism record with 10.5 million overnight stays, representing an increase of 3.8% compared to the previous year. The country registered a 5.9% rise in tourist numbers in August alone, receiving 3.8 million visits during that period. Significantly, data published by the National Statistics Institute (INE) reveal that this growth is not limited to international travellers, as domestic tourism follows the same trend [1].

Beyond mass tourism, other obstacles amplified by this phenomenon impact local governance and human activity management. The housing crisis affecting lower and middle classes in Portugal and poverty in Lisbon's peripheral neighbourhoods are further adverse effects triggered by high-flow tourism and gentrification, both driven by neoliberal transnationalism. This wicked problem [2] stems from neoliberal ideas and practices that spread and consolidate transnationally, influencing and manipulating governance and economies on a global scale. It is a process that reinforces the hegemony of capital through the opening of speculative markets, among other mechanisms of social and economic domination, thereby intensifying unsustainable development [3].

In Lisbon, the current distribution of residents and visitors is markedly unbalanced, with excessive pressure resulting from the large scale of this tourism model and its concentration in popular activities. Rather than encouraging a creative redistribution of people and supporting new cultural and recreational attractions, the focus remains on what typically appeals to both locals and tourists. It is therefore urgent to revitalise alternative sites of cultural and touristic interest, in order to energise areas of the city that lack social, cultural and economic opportunities and could significantly contribute to a more equitable redistribution of visitors. This potential becomes even more relevant in urban zones adjacent to vulnerable neighbourhoods. Several historic areas of Lisbon that now attract hundreds of thousands of visitors annually were once impoverished territories inhabited by vulnerable populations, and a similar dynamic of transformation could occur in contemporary peripheral neighbourhoods.

To ensure sustainable and holistic development in Lisbon while simultaneously strengthening democratic quality, it is essential



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to create structural conditions that promote a balanced articulation of social, cultural, environmental and economic dimensions across the urban fabric, reinforcing interfaces between residents and visitors. Among the possible responses, community-based initiatives stand out, mobilising participatory design as a co-production methodology aimed at the substantive involvement of residents in socioeconomically vulnerable neighbourhoods. Systematising such practices can expand socio-cultural and economic opportunities, densify interconnections among diverse user profiles, and foster community empowerment processes oriented towards recognising and valuing local identities and sustainable practices anchored in the territory.

In a global scenario marked by fragmentation and tension, participatory design (PD) can be understood as a political and methodological instrument to promote dialogue, solidarity and coexistence, reaffirming its democratic vocation in mitigating conflicts and rebuilding community ties. In Lisbon, where mass tourism and gentrification exacerbate inequalities and weaken local identities, it becomes urgent to explore how collaborative practices can rebalance relations between residents and visitors, explore ways of redistributing opportunities and informing more inclusive governance models scalable to other urban contexts. Within this framework, the XAPAXAPA initiative positions itself as a critical experiment, interrogating the capacity of PD to empower communities, preserve cultural heritage and create lasting conditions for a sustainable and just urban life.

Against this backdrop, the exploratory research seeks to understand how PD can act as an agent of dialogue and coexistence, mitigating the socio-economic and cultural impacts of tourism massification in Lisbon while promoting sustainable and inclusive urban development. It aims to analyse how community-driven initiatives based on collaborative processes reinforce local identities and foster social cohesion in vulnerable neighbourhoods, while investigating strategies to ensure the sustainability and scalability of projects such as XAPAXAPA Colab. The study focuses on the potential of these practices to strengthen communities, institutionalise inclusive models and create durable conditions for a fair, equitable and resilient urban life.

These contributions are advanced as part of an exploratory study. Conceptually, it introduces soft situationism as a lens for PD in urban contexts, framing aesthetic, material and playful practices as inclusive and non-confrontational modes of political engagement. Methodologically, it documents XAPAXAPA Colab as a long-term, place-based participatory design process that connects peripheral communities and urban centres through situated practices such as patchwork, *dérive*, visual storytelling and community fairs. Rather than proposing a method to replicate in other urban contexts, the present contribution lies in articulating how soft situationism operates as a PD orientation within sustained community-based practice, supporting relational, cultural and post-growth approaches to urban resilience.

2 Participatory Design for Inclusive and Equitable Urban Futures

2.1 Place-Based Participatory Design with Communities

Following this perspective, the following section situates XAPAXAPA Colab and soft situationism within PD engagements with communities and place. PD dates back from workplace democracy movements of the 1970s, which sought to involve workers in the design of technologies and systems that directly affected their working practices and conditions. It later expanded to encompass community-based and place-based engagements, particularly in contexts of social inequality and marginalisation. This evolution is often analysed together with the different aspects characterising PD for, with and by communities, exposing power asymmetries, authorship and political intent within participatory processes [4]. Participation, in this sense, is defined not by inclusion alone but by communities' capacity to shape agendas and outcomes.

Recent research in the field refer that community-based PD requires iterative and ongoing engagement, trust-building and accountability to avoid extractive or symbolic participation, especially when working with disenfranchised groups [5]. In place-based contexts, PD has thus been mobilised as a design-led research approach that values local knowledge, everyday practices and situated place-making in pursuit of social justice and empowerment [6].

Within this lineage, XAPAXAPA Colab operates as a long-term, community-embedded initiative in a peripheral urban territory affected by socio-economic vulnerability and tourism pressures. By establishing a stable relational infrastructure through the Sewing Café and integrating a soft situationist aesthetic as an inclusive mode of political expression, the project extends PD towards cultural, relational and post-growth approaches to negotiating place, identity and urban futures.

2.2 Genuine Participation and Co-Creation Dynamics

PD is conceived as a dynamic and reflexive practice, characterised by processes that require constant adaptation and guided by principles of equity. Its purpose is to foster openness, inclusivity and agency within decision-making processes aimed at sustainability at both local and global scales. To achieve this, it mobilises diverse exploratory methods, tools and techniques that encourage the involvement of participants with varied experiences and knowledge, tailored to a specific context. By actively integrating marginalised voices, as well as human and more-than-human actors, this approach contributes to the transformation of societal contexts and envisions possible futures [7].

It is essential that PD processes result in what Bødker et al. [8] define as “genuine participation,” which implies a two-way communication flow (designer → participant and participant → designer) rather than a one-way interaction (designer → participant). Only under these conditions do participants assume the role of co-creators, collaborating with designers and peers in the development of outputs that express their ideas. On one hand, “genuine participation” requires practical objectives, where designers and participants jointly work towards understanding a given problem



Figure 1: Images from the Sewing Café, where XAPAXAPA Colab takes place. Left: patchwork created from repurposed textiles. Right: participants engaged in discussing patchwork compositions.

and its solution. On the other hand, it involves governance and public interest goals, requiring designers to understand users, their practices and their relationships with specific contexts [9].

Equally relevant in defining PD practice is the active involvement of people in experimenting with and selecting the set of technical means that enhance the adopted technology, as this responsibility intensifies collaborative processes. This constitutes an emancipatory dynamic associated with political intent, placing stakeholders on an interactive plane to develop alternatives through democratic design experiences [10].

The aim of emancipation is not merely to transform potential passivity into the capacity to act, but to recognise that any free thoughts and associations, where teaching and learning occur, are themselves fundamental elements of an emancipated community that appropriates facts to construct its own trajectory [10]. Emancipation is a prerequisite for the cultural development of humanity and civilisation, grounded in universality, critical thinking and equality. It is crucial to safeguard the knowledge people possess and prevent its erosion, because each individual “is an extraordinary being, with a place in the heaven of ideas” [11].

2.3 Defining Soft Situationism in Collaborative Design

The participatory process of XAPAXAPA Colab is grounded in two technical means: the practice of sewing and patchwork using repurposed fabrics for the creation of urban accessories (Figure 1) and the use of a visual language of soft situationism as a PD orientation for producing prints through screen printing and stencil techniques (Figure 2). Participants actively contribute to the selection of colours, motifs and visual themes through collective discussion and experimentation, while the design team supports the

translation of these contributions into a coherent visual language across different media.

The application of PD to patchwork and the creation of images representing place carries a political dimension aligned with situationist principles, as the appropriation of established conventions and their subsequent reconfiguration stimulate shifts in social consciousness. Similar to Situationism, a political and cultural avant-garde movement that emerged in Europe in the mid-20th century, XAPAXAPA Colab advocates a critical approach to social reality. Situationism aimed to overcome the capitalist society of its time, perceived as oppressive and a source of alienation, by creatively employing diverse modes of expression to generate disruptive and potentially revolutionary situations within everyday life. Analogously, XAPAXAPA Colab leverages participatory design to communicate an alternative vision of development. Through a soft situationist approach, the initiative is intended to support processes of critical reflection among residents and visitors regarding the impacts of mass tourism, while positioning itself as an exploratory contribution to social transformation.

One of the most significant aspects of the Situationist movement was the development of the concepts of *dérive* and *détournement*, both introduced by Guy Debord. The practice of *dérive* is characterised as a spatial and conceptual exploration of the city through drifting, focusing not only on the urban environment but also on the feelings and emotions of its inhabitants. In contrast, *détournement* involved the appropriation, modification and recreation of artistic production from the present or the past. These two concepts were frequently juxtaposed and articulated with theories of psychogeography and unitary urbanism [12].

The methods employed in *détournement* are closely related to collage and assemblage techniques using found elements, previously adopted by Dadaism and Surrealism. Its core principles include the



Figure 2: Images from the Sewing Café, where XAPAXAPA Colab takes place. Left: stencil workshop. Right: two backpacks, one printed using stencil, the other with silkscreen.

partial loss of interest in each diverted element, or even the complete elimination of its original meaning, while generating a new significance for the ensemble or for individual components. Unlike other collage and assemblage practices, *détournement* sought to be more inclusive, anonymous and reproducible across various media, such as writing (through creative appropriation of textual content), cinema (by reusing pre-existing films), and artistic propaganda (through the creative manipulation of mass media imagery).

Another concept shared by the XAPAXAPA project and Situationism is the notion of the *flâneur*, originating from the detached observer wandering the streets, as described in Edgar Allan Poe's short story "The Man of the Crowd." Following Baudelaire's translation of Poe's work, this figure acquired a distinctly European meaning, encapsulated in the essence of the *flâneur*. At this point, the representation of someone strolling through the city shifted from the frantic bustle of London streets to the more sophisticated urban context of Parisian arcades. These arcades, however, were later demolished to make way for a more rigidly organised topography. Thus, both at the time of its emergence and throughout Situationism (or within the scope of XAPAXAPA Colab), the *flâneur* is perceived as a nostalgic figure, observing the city's development and the loss of characteristics of once-familiar places. The *flâneur* maintains a commitment to the city it inhabits, and its very existence symbolises a consciousness that anticipates future challenges for subsequent generations of urban wanderers [13].

Within this context, the concept of soft situationism as a PD orientation refers to the adaptation of situationist principles, interpreted in a way that results in a less radical application, integrated into collaborative and creative practices. Rather than promoting disruptive and revolutionary actions, as in the original movement, soft situationism seeks to generate critical reflection in everyday life through aesthetic and participatory interventions. In XAPAXAPA

Colab, this approach materialises in the creation of images and objects that question social and economic conventions, stimulating collective awareness of the impacts of mass tourism on the historic centre and the alienation of peripheral territories, without resorting to direct confrontation but privileging inclusive and dialogical strategies (Figure 3).

3 XAPAXAPA Colab: Foundations and Participatory Framework

3.1 Origins and Community-Centred Approach

XAPAXAPA Colab was launched in 2024 in the parish of Santa Clara, located in Alta de Lisboa (northern area of Lisbon), focusing on bottom-up initiatives that involve active community participation. Santa Clara is characterised as an expanding urban area, predominantly residential, with limited commercial offerings and a scarce presence of small and medium-sized enterprises. Like other peripheral parishes of the city, it is part of the "Priority Intervention Neighbourhoods and Territories" (BIP/ZIP) programme, within the framework of the Local Development Strategy of Lisbon City Council. This territory benefited from the Special Rehousing Programme (PER), which promoted the construction of municipal housing, as well as the urbanisation of Alta de Lisboa, factors that contributed to population growth since the early 2000s. According to INE [14], the parish's population increased by 5.3% compared to 2011, reaching 23,673 residents, a trend contrary to that observed in the municipality of Lisbon, which continues to lose population. It is estimated that around 30% of the parish's inhabitants are under 25 years old. Population ageing follows an upward trend, currently more significant than the growth of children and young people under 25 [15].

This initiative is part of a broader collaboration with the Aga Khan Foundation (AKF), an international non-profit organisation

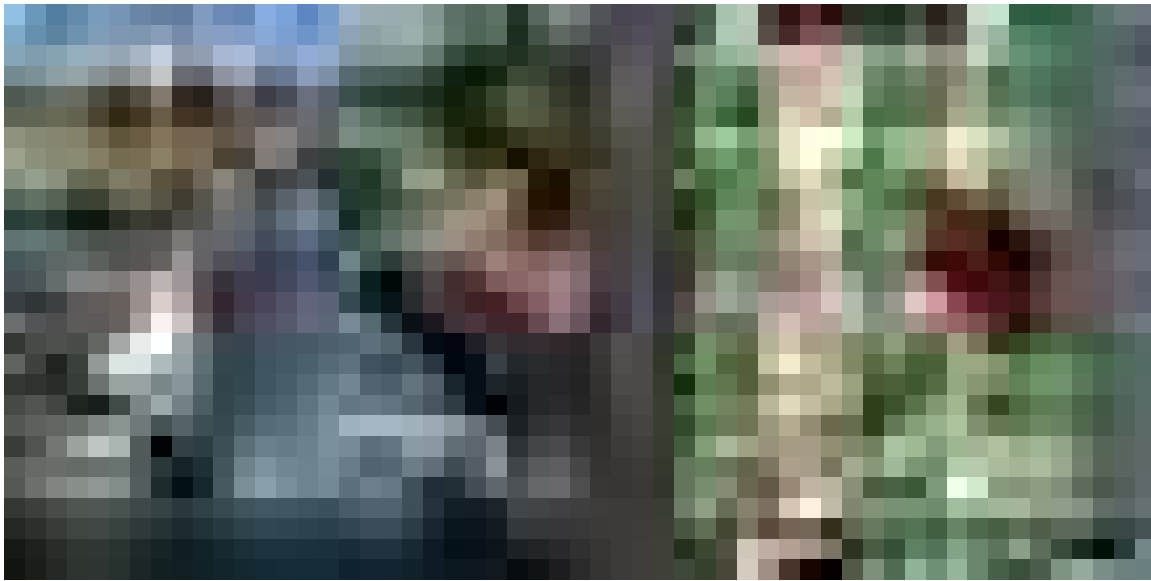


Figure 3: Images from the soft situationist approach. Left: photograph taken during a *dérive* through the Alta de Lisboa, where Lisbon's largest popular fair—the Clock Fair (Feira do Relógio in Portuguese)—takes place. Right: representation of the fair stalls overlaid on a map of Lisbon, with the Santa Clara parish depicted as the heart of the city.

dedicated to promoting sustainable development in vulnerable regions. Since the 1960s, the Foundation has operated in areas such as education, health, economic development and cultural preservation, prioritising community-centred approaches and strategic partnerships. Collaboration with AKF began in 2017 through a set of PD projects targeting communities on the outskirts of Lisbon, illustrating the potential of transdisciplinary methodologies by integrating participatory art and design, social innovation and alternative economic strategies to promote social and cultural sustainability in local communities [16–18]. The XAPAXAPA Colab is funded under the programme “Integrated Operations in Disadvantaged Communities in the Lisbon Metropolitan Area,” Component C3 – Social Responses of the Recovery and Resilience Plan (PRR), within the framework of the implementation of the Metropolitan Support Plan for Disadvantaged Communities of the Lisbon Metropolitan Area (PMACD-AML). These operations are carried out by the Aga Khan Foundation Portugal and financed through the Recovery and Resilience mechanism approved by the European Commission (EC).

Currently, XAPAXAPA Colab activities take place weekly at the Sewing Café (*Café Costura* in Portuguese), hosted by the Residents' Association of PER 11, a local organisation based in the PER 11 neighbourhood in Santa Clara, whose mission is to strengthen community ties, combat isolation among the elderly through physical activity and promote residents' well-being. PER 11 is a housing complex resulting from the Special Rehousing Programme, and the association was created to represent and support the local community. Within this context, the collaborative lab aims to contribute to transforming participants' lives, serving as a space for sharing life stories and memories associated with Santa Clara and the Alta de Lisboa territory, where diverse cultures coexist, creating a living

heritage to be preserved for future generations. At the same time, the initiative seeks to act as an interface between residents of this area and users of Lisbon's most visited zones, promoting the expression of peripheral culture and latent creativity. By commercialising the products created, the initiative aims to raise awareness among visitors, decision-makers and citizens about the existing economic, social and cultural potential, grounded in a post-growth philosophy and sustainable development.

The concept of post-growth constitutes a critical framework that prioritises sustainability and equity, proposing a societal redefinition that transcends the paradigm of continuous economic growth. This perspective advocates a qualitative transformation centred on well-being, social justice and ecological balance, rather than material accumulation, suggesting alternatives such as circular economies and cooperative ownership models. By expanding the sustainable development agenda, post-growth thinking encourages critical analysis of prevailing practices and their socio-economic and environmental implications, promoting solutions based on collaboration, sharing and co-creation. Within this context, collaborative laboratories such as XAPAXAPA Colab exemplify how participatory methodologies can revitalise local economies, generate social and cultural value and simultaneously reinforce the equitable redistribution of resources, aligning with a philosophy oriented towards justice and sustainability [19].

3.2 Integrated Approach to Democratic and Collaborative Design

The participatory approach developed by XAPAXAPA Colab positions itself as an exploratory attempt to cultivate a democratic practice centred on small-scale projects that are adaptable and

replicable. In addition to creating spaces for co-creation, the initiative seeks to explore ways of engaging with the prevailing system through transformative processes that articulate possibilities for social and cultural innovation, with the potential to inform public policy. The adoption of collaborative strategies with residents is therefore approached as a means of exploring how relationships between people and their contexts might be reconfigured, opening up possibilities for socio-cultural and economic opportunities related to sustainability and local identity. Directly or indirectly, this systematisation of processes, driven by PD, is intended to engage with issues related to gentrification, unsustainable tourism and social exclusion. These orientations are articulated as part of an exploratory design process, with their social, cultural and economic implications subject to ongoing and forthcoming evaluation.

The design methodology adopted combines social innovation and a relational participatory practice unfolding through successive stages. Narratives are explored with participants through informal collective conversations during and between the hands-on activities, encouraging participants to share stories at their pace. The participants of the Sewing Café are all women residing in the parish of Santa Clara, with one born in Portugal and the remaining participants originating from Portuguese-speaking African countries (PALOP). The process begins with the collection of life narratives using an ethnographic and dialogical approach, enabling an understanding of community experiences. These stories are transformed into representative images, created in collaboration with residents or used as a basis for a situationist exploration of the parish. Among the strategies employed, the development and use of an interactive pattern experimentation programme developed in p5.js to facilitate interactive pattern experimentation stands out (available at <https://editor.p5js.org/gorgelpinto/full/OuM4dPE4o>). Decisions regarding which stories, patterns or artefacts are developed into products are made collaboratively, with guidance from the design team, balancing participants' preferences, feasibility and symbolic relevance to the territory. The resulting patterns are applied to fabric using graphic techniques such as screen printing and stencilling. Subsequently, the printed fabrics, combined with patchwork produced from repurposed textiles, are used to create a collection of urban accessories. This production phase takes place at the Sewing Café, hosted by the Residents' Association of PER 11. Throughout the participatory process, informed consent principles are followed, with particular attention to anonymity, voluntary and variable levels of involvement, and the right to withdraw, given the vulnerability of the community context.

Communication constitutes a structural element of the XA-PAXAPA Colab project, encompassing brand dissemination and the circulation of the urban accessories collection to ensure a consistent identity supported by a storytelling approach that values community dynamics and the democratic spirit of the initiative. Narrative plays a central role throughout the process, articulating different stages and promoting critical reflection on gentrification, tourism and social exclusion, while pointing to inclusive solutions for tourism redistribution and socio-economic empowerment. This strategy materialises in a visual identity system (Figure 4) and a website that, in addition to promoting the project, provides useful information for residents and visitors interested in exploring territories in Alta de Lisboa, diverting them from the historic centre.

Finally, the commercialisation of the pieces occurs in small fairs or via website, reinforcing the performative character and direct contact with the community, with the aim of conveying an alternative vision for the city and boosting the local economy. Revenue generated through sales is reinvested in the initiative and shared with participants according to previously agreed levels of participation, reinforcing transparency and local economic sustainability.

In addition to the ongoing participatory activities and the gathering of narratives at the Sewing Café, a key moment for primary data collection took place during the official launch exhibitions (Figure 5). These events enabled visitor engagement through unstructured interviews, to capture perceptions regarding the project's objectives, its cultural relevance and social impact. These data will inform the iterative process and provide improvements to the PD approach, with the aim of supporting evidence-based evaluation and the consequent scalability and long-term sustainability of the project.

4 Conclusion

This exploratory study presents initial reflections on collaborating with a Sewing Café led by community members in the periphery of Lisbon as an ongoing partner in PD processes addressing tourism massification. To date, the experience suggests that such informal and materially grounded spaces can support ongoing participation, trust development over time and situated forms of co-creation, while also drawing attention to the challenges of operating within disenfranchised contexts marked by structural inequality and limited resources.

Conceptually, the paper articulates soft situationism as a PD orientation that reframes everyday practices and narratives through aesthetic and material interventions. Rather than functioning as a transferable method or solution, soft situationism offers a way of engaging political questions of tourism, centre-periphery relations and urban identity through inclusive and non-confrontational design practices embedded in place-based community work.

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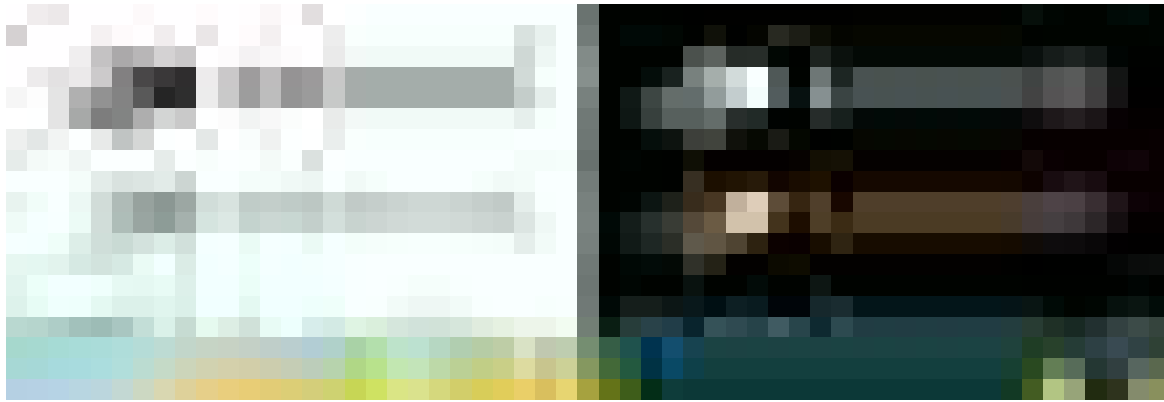


Figure 4: Excerpt from the XAPAXAPA brand guidelines.

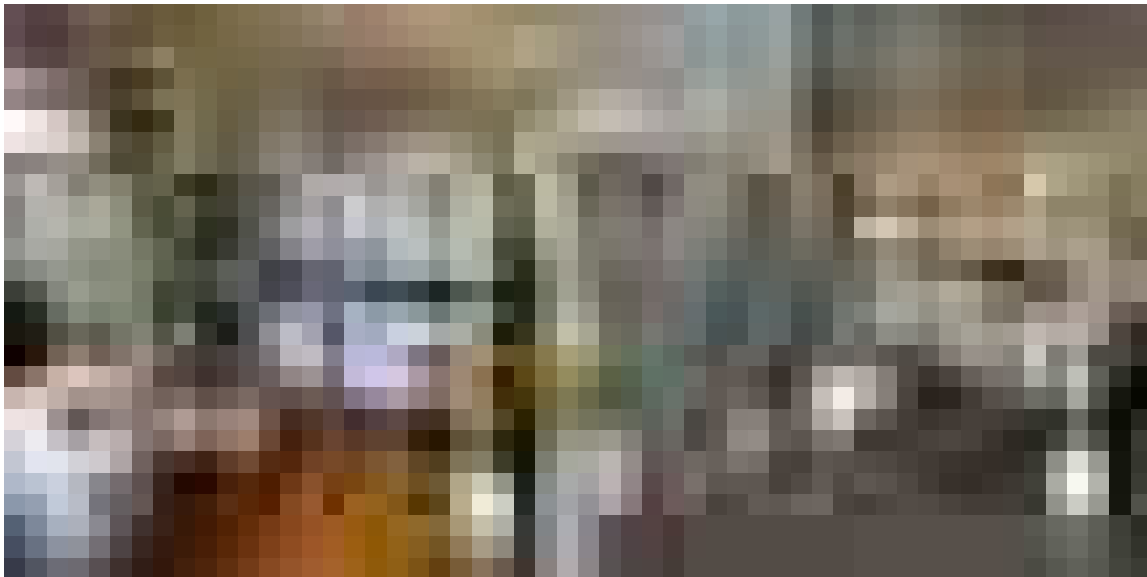


Figure 5: XAPAXAPA launch with pop-up display for exhibitions and fairs, November 2025. Left: Quinta Alegre (Palace of the Marquis Alegrete), Santa Clara, Lisbon. Right: Studio Eight, Marvila, Lisbon.

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The Role of Figurations in Participatory Design

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Abstract

This article explores how figurations emerged as critical and generative outcomes within participatory design processes aimed at restoring community agency. Drawing on feminist and participatory design scholarship, figurations are framed not as predefined conceptual tools but as practices that arise when participants materially and affectively intervene in their own realities. The study focuses on a series of workshops held in Chía, Colombia, where participants transformed a community photographic archive through embroidery and collective montage. As participants engaged with the images, they took control of the process, using tangible modifications to question, reinterpret, and co-construct visions of their public spaces. These encounters generated intimate and situated discussions about the territory, displacing formal consultation processes and activating new forms of collective imagination. Figurations appeared through this process as embodied and relational acts of political imagination. Rather than representing the future, they configured a shared present—an opening to think and act together through material practices of care, memory, and transformation.

CCS Concepts

• **Human-centered computing** → Participatory design; Social and professional topics; Cultural characteristics; Human-centered computing; Visualization theory, concepts and paradigms.

Keywords

Figurations, participatory design, commoning, situated knowledge, counter-devices, collective imagination

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1 Introduction

Participatory design (PD) has historically sought to enable communities to influence matters that affect their lives—from its Scandinavian origins [1, 2] to participatory research traditions in Latin America [3]. During the last decades in Colombia, participatory approaches have become institutionalised within governance frameworks [4, 5], yet these processes often privilege formality over genuine community agency. Especially in land-use and urban planning policies (*Planes de Ordenamiento Territorial, POT*), participation tends to reproduce bureaucratic validation mechanisms that exclude everyday knowledge and affective relations with territory [6].

The project discussed in this paper emerged as a response to this problem. Rather than starting from a theoretical template, the intention was methodological: to create conditions under which community members could regain agency and voice. Therefore, an open-ended series of workshops was set up in Chía, a municipality near Bogotá, inviting residents to participate in a local space for sharing and cocreating through the work with printed copies from the local public photo archive. The reason behind the use of these photographs was to create a notion of common spaces related to situated relationships.

The instruction for the workshops was minimal—choose any image and intervene as you wish—so that participants, not the facilitator, would determine the scope, direction and pace of the work. The workshops did not originate from institutional intentions, therefore the expectation was not to gather opinions about pre-defined plans but to create a community-based space for shared action in which meanings could be negotiated materially and collectively.

The concept of figurations presented here was not introduced at the outset; rather, it emerged through the practice—when participants began to physically transform the images that represented them and their environment. By taking control of the photographs, the participants began to figure their experiences, producing situated and affective expressions of collective life. Through these acts, figurations became tangible manifestations of empowerment and relational knowledge.

This article examines how such figurations appeared and what they reveal about participatory design as a practice of co-construction. It argues that giving participants the means to act upon shared materials can reconfigure participation as a sensitive and speculative process—one that modifies not only representations but also the temporal and social fabric of participation itself.

Our research question is: How can participatory methodologies that return agency to participants enable the emergence of figurations as situated, relational, and imaginative practices?

Beyond its empirical dimension, this work contributes to an ongoing discussion within participatory design: how can communities figure the common when institutional frameworks constrain collective imagination? By foregrounding material and affective modes of participation, we propose figurations as traces of agency—evidence that design can be both inquiry and resistance.

2 THEORETICAL FRAMEWORK: FIGURATIONS – THINKING FROM WHAT IS NOT YET

The concept of figurations has been articulated across feminist, visual, and design theory as an alternative to representational thinking. Haraway [7] describes figurations as performative images that provoke rather than depict, enabling thought through embodiment and situatedness. Braidotti [8] defines them as nomadic and sustainable positions from which subjects can reimagine themselves in motion. In both cases, figurations are not symbols but acts—dynamic processes that connect thinking with doing.

Within participatory design, figurations resonate with practices that challenge instrumental approaches to inclusion. Lindström and Ståhl [9] describe patchworking as a relational and material process of assembling fragments, opening design to multiplicity and care. Ledesma [10] similarly contrasts figurations with the visual paradigms of representation, proposing them as openings that interrupt dominant narratives. In the Latina American context, Fals-Borda's notion of *sentipensar*—to feel-think collectively [3, 11]—echoes this embodied epistemology: knowledge produced through affect, matter, and relation.

Recent scholarship has re-engaged with questions of temporality and infrastructure, suggesting that design operates not only through artefacts but through the maintenance of relations and capacities for imagination [12, 13]. In this sense, figurations can be read as micro-infrastructures of participation—temporary assemblages that hold together gestures, materials, and stories in flux. The workshops in Chía exemplified this dynamic: the act of re-working archival images became an infrastructural gesture, sustaining participation through care and shared material engagement.

In this study, figurations are not theoretical premises but findings that surfaced through practice. As participants began to intervene in the images of their community, they enacted new forms of political imagination. The process of sewing and assembling became an ontological exploration—an act of collectively figuring the present, not predicting the future.

3 METHODOLOGY: THE CASE OF CHÍA, COLOMBIA

3.1 Context

The municipality of Chía, near Bogotá, experienced limited citizen involvement during its 2016 Territorial Ordinance Plan (POT). The plan was suspended in 2019 following a citizen lawsuit denouncing insufficient participation [14]. Although legal frameworks in Colombia require participatory planning (Law 388/1997;

Law 2166/2021), participation has largely remained a formal mechanism of institutional validation [4, 5]. Less than 1% of inhabitants took part in official consultations, which were highly centralised and predefined.

Chía forms part of the metropolitan area of Bogotá, where rapid urban expansion and speculative real estate development have intensified tensions between rural and urban communities. Participation in land-use planning has often been limited to online surveys and public hearings that privilege technical experts over citizens. These formats, while nominally participatory, tend to reaffirm institutional control rather than redistribute it, producing what local activists call 'participation without voice'. Within this environment, communities have turned to informal and cultural practices—as spaces for political expression outside official channels. The project presented here emerged from such informal networks, responding to a collective desire to be heard beyond consultation procedures.

This context motivated an alternative participatory initiative grounded in design practice. The goal was to open a space where community members could act, decide, and imagine beyond formal restrictions.

3.2 Research Design

The project followed a Research-through-Design (RtD) approach that deviates slightly from traditional approaches [15] and aligns more with the use of objects and material work as a mediation tool for collective reflection [16]. In that spirit, a series of participatory workshops were conducted from February to August 2023 at the Hoqabiga Municipal Library. Recruitment took place via WhatsApp and personal invitations, and approximately 50 residents participated at different stages, yet only a stable group of 10 women (aged 35–80) sustained the process over seven months, meeting weekly for three-hour sessions.

Although it was an open call to participate, it also sought to prioritise women active in neighbourhood or cultural associations. Each session combined making and dialogue: short introductions, individual reflection with materials, and group discussion. Documentation was produced collaboratively, as participants photographed and described their own work.

As mentioned before, participants worked with printed copies of photographs from the library's public photo archive (Figure 1). The instruction was simple: choose any image and intervene as you wish. This open-ended method aimed to foster personal engagement and material agency. As they stitched, cut, and reassembled the photographs, participants began to discuss their memories and aspirations regarding public spaces in Chía (Figure 2). The act of physically altering the photographs became a means to re-negotiate what these spaces meant to them and what futures they could imagine together.

As an example, one participant intervened a photograph depicting Don José, a local farmer from the area. Drawing from this image, the participant began to speculate about his life story: how many children he might have had, whom he lived with, what kind of work he did, and what it might have meant to inhabit the territory during a time when it still held a strong agricultural vocation. These conjectures also opened questions about how men dealt with their emotions within that historical and social context.

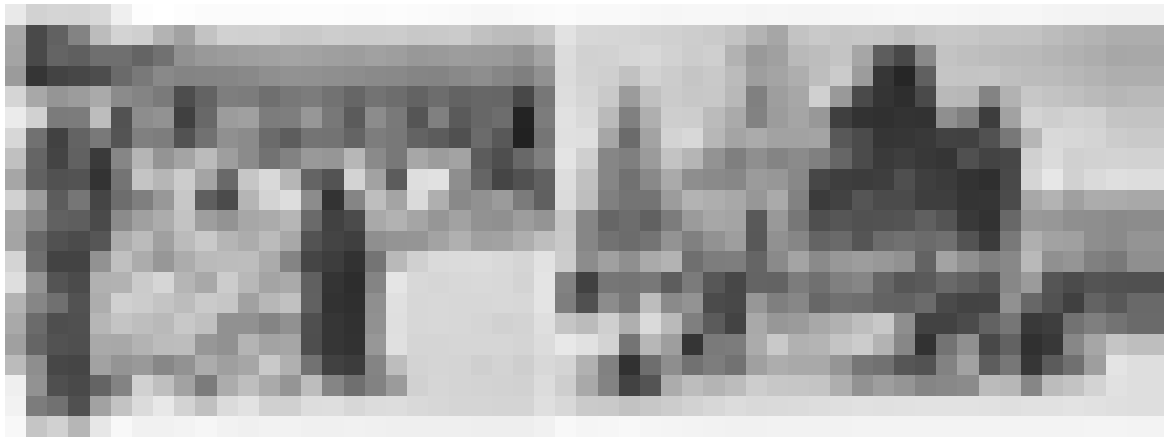


Figure 1: Examples of some of the images used: Market in the main square of Chía. Community photo archive, Hoqabiga Library, Chía, Colombia (Institutional Catalogue: <https://chia.bibliotecasidecut.com>).

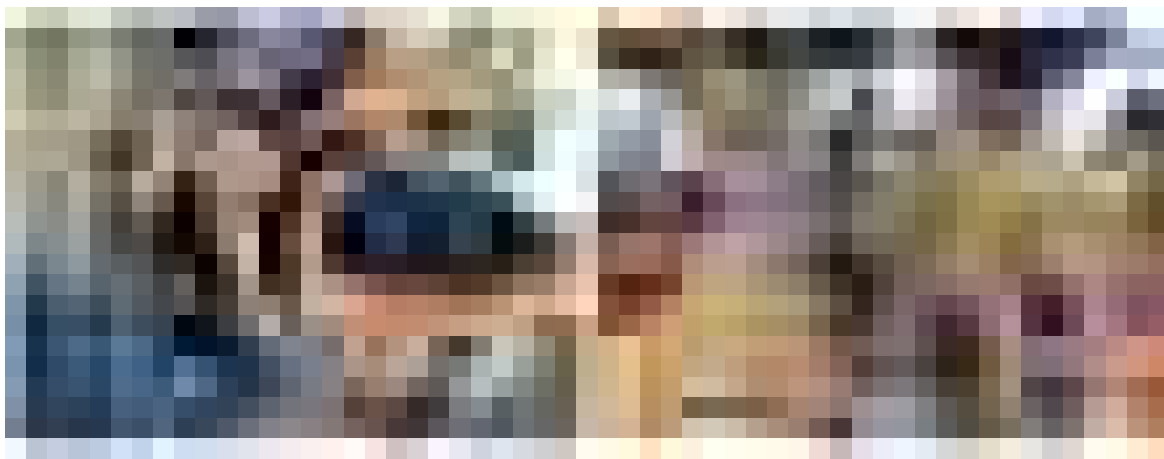


Figure 2: Workshop table at the Hoqabiga Library. Participants embroidering community photographs (Photo by Diana Mahecha).

The intervened photograph thus became a trigger for a broader conversation about contemporary understandings of ‘being a man’ and the social expectations attached to masculinity. The age differences among the participants fostered an intense exchange between younger and older women, who questioned and challenged each other’s views on gender roles. Despite the diversity of opinions—and the emergence of radical positions—the act of sewing generated an atmosphere of attentive listening. Both the conversation and the bodily arrangement in the space gradually transformed, giving rise to a sense of proximity and intimacy.

In this process, the complicity that emerges through engagement with materials facilitated the encounter among participants: ‘in learning the movements, in sharing needles, threads, and photographs, in feeling the fixed gazes focused on the work’ [17].

3.3 Analysis and Ethics

Documentation included field notes, photographs, and transcripts of informal discussions. All participants consented to the inclusion of their anonymised contributions. Data were analysed inductively, focusing on emergent themes of empowerment, collective authorship, and spatial re-appropriation. Ethical principles of reciprocity and co-authorship guided the process [18]. This rhythm of alternating making and conversation proved crucial to sustaining engagement, transforming the workshops into spaces of trust rather than data collection.

4 RESULTS AND DISCUSSION

4.1 Empowerment through Tangible Intervention

The first transformation observed was methodological: once participants took control of the images, the role of the facilitator diminished. By manipulating photographs, participants shifted from

subjects of study to co-authors of meaning. The conversations that unfolded were not about representation but about lived experience—how they felt about the plazas, markets, and neighbourhoods depicted. Figurations began to appear through this empowerment: the stitched images embodied affective, situated reflections that reconfigured the act of participation itself.

As the workshop progressed, the embroidered photographs became triggers for dialogue about the nature of public space in Chía. Participants reflected on how certain areas had changed or disappeared, sharing memories of collective festivities, marketplaces, and informal gatherings. The act of handling and altering the images opened up stories that had long remained silent (Figure 3). One woman commented that sewing through the picture of the main square was like “stitching back the time when everyone met there”—a metaphor for reclaiming belonging through touch.

During one session, a photograph of the Río Frio bridge prompted a heated conversation about pollution and access. As stitches began to outline the river’s course, one participant noted that ‘it used to connect, now it divides’. Others responded by adding blue threads that extended beyond the photo’s edge, symbolising continuity beyond the frame. In this act, the river ceased to be an object of representation and became a collective metaphor for connection and care. Such material gestures exemplify what Ingold [19] calls ‘thinking through making’, where meaning is generated through movement of hands as much as through words.

This tangible interaction blurred the line between method and reflection. The material engagement enabled the participants to recognise themselves as active subjects shaping the narrative of their community. Through their gestures, they redefined the relationship between participation and territory, suggesting that to make together was also to re-inhabit together. The embroidery thus became not merely a decorative act but a spatial and temporal gesture of agency and care.

4.2 Figurations as Emergent Practice

The embroidery sessions soon evolved into acts of collective speculation. Participants described the process as “healing” or “sewing stories together”. The photographs, marked by thread and texture, transformed into living artefacts of memory and imagination [20]. The final montage, displayed at the library, juxtaposed the embroidered photos to reveal interwoven times and voices [21, 22]. The decision to expose both sides of the photographs—showing knots and errors—was itself figurative: a gesture of openness and vulnerability.

In their evolving compositions, the women began to recognise patterns between their interventions. Some stitches mirrored others; colours repeated across unrelated photographs. This aesthetic resonance became a conversation in itself, a tacit dialogue across materials that re-defined authorship as collective. Figurations thus operated as distributed authorship, emerging through material continuity rather than formal coordination.

Beyond the visible outcomes, the collective process of embroidery became a method of knowing through the senses. Participants often compared the tension of the thread to the effort of remembering: some stitches were tight and resistant, others loose and hesitant. The tactile rhythm of the needle guided conversations

that would not have surfaced in a conventional discussion. As the women embroidered, they reconstructed shared experiences of displacement, motherhood, and everyday resilience, weaving affective threads that connected personal stories to collective narratives. The workshop thus turned into a sensory archive, where knowledge was produced through gesture, rhythm, and proximity—an embodied epistemology that resonates with feminist approaches to material thinking [19, 20].

As the compositions grew, the assemblage of fragments started to operate as a speculative device in its own right. The embroidery did not represent alternative futures but invited participants to inhabit the multiplicity of their present. Each photograph became a site of negotiation—between past and possible, between personal emotion and public space. Through this practice, figurations unfolded as relational infrastructures: temporary constellations of care, imagination, and critique. In this sense, the aesthetic was inseparable from the political; the beauty of the work lay not in its visual harmony but in its capacity to hold together conflict, diversity, and hope.

These acts blurred the boundaries between method and result. The workshop ceased to be a research activity and became a co-constructed space of presence, where figurations operated as material-discursive events. Political tensions surfaced when local politicians tried to appropriate the exhibition for campaigning; the group resisted, reaffirming its autonomy. The figurations thus acted as counter-devices [10], enabling participants to reclaim agency and reframe public discourse.

These dynamics situate the Chía workshops within a broader landscape of participatory design practices that seek to resist the institutional domestication of participation [12]. Rather than functioning as a project to deliver outcomes, the process became an infrastructure of commoning—sustaining relations and knowledge that exceed the temporality of the research itself. In this sense, the figurations act as social mediators: they do not claim authority but circulate affect, enabling participants to see and be seen differently. What emerges is not consensus but co-presence, a shared capacity to dwell together in complexity.

4.3 From Discussion of the Future to Construction of the Present

Through this process, the group shifted from imagining distant futures to co-creating a shared present. Rather than forecasting, they practised figuring: reconfiguring time, space, and relation through collective making. This resonates with Rancière’s [23] notion of the redistribution of the sensible—altering what can be seen, said, and done. Figurations, therefore, emerged as both a political and aesthetic reordering of participation.

As participants continued to meet, the workshops ceased to operate around the idea of projecting possible futures and instead turned toward examining what already surrounded them. The group began to reflect on how to inhabit the present differently: how to take care of existing spaces, how to maintain their social connections, and how to sustain their gatherings beyond the workshop. Conversations about parks, markets, and daily routes led to small collective decisions—repainting benches, revisiting neglected

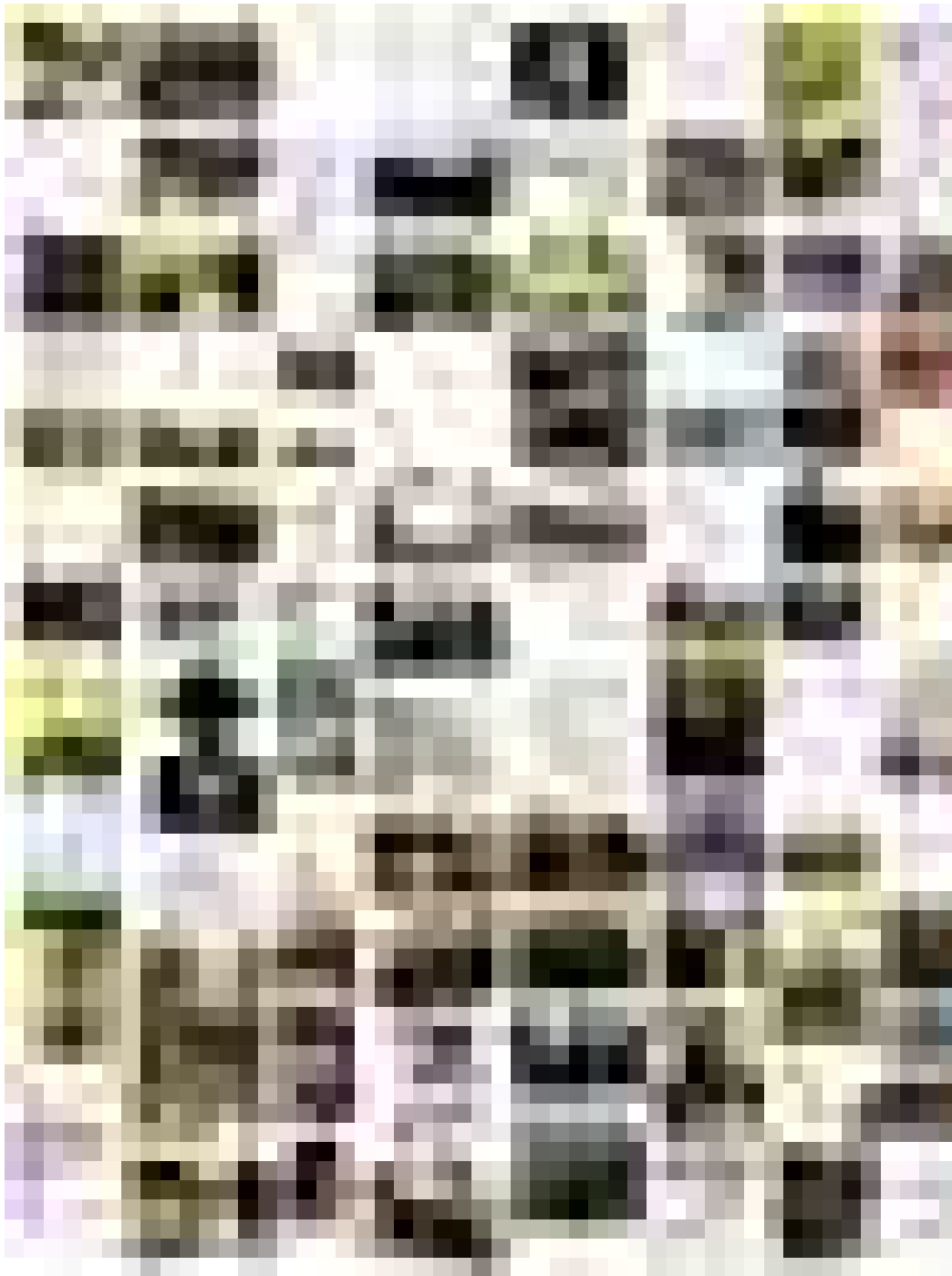


Figure 3: Collective montage of embroidered photographs exhibited at Hoqabiga Library, Chía (Photo by Diana Mahecha).

corners, or restoring places for meeting. These small but tangible actions became figurations of care, grounding imagination in practice.

Even after the official workshops ended, participants continued to meet informally at the library, bringing new images and materials.

What began as a research activity gradually turned into a collective maintenance practice—keeping relationships alive through small, recurrent gestures. This continuity, rather than the final artefacts, became the true outcome of the project. It illustrates what Light and Akama [13] describe as the ‘everyday politics of design’: sustaining



Figure 4: Reverse side of embroidered photographs showing knots and traces of process (Photo by Diana Mahecha).

the fragile temporalities of collaboration beyond project timelines (Figure 4). In Chía, the shared act of making offered a temporal refuge from bureaucratic time, allowing participants to imagine the present as a site of care rather than planning.

This transition also contrasted with more formal approaches to speculative design [24], where imagination is often framed as a projection of possible futures with a critical view. Here, speculation took place in the immediacy of experience: participants speculated over their past, present, and future through doing, rather than imagining from afar, following more situated forms of speculative design that do not avoid conflicting views and seek collective reflection through agonism and friction [25, 26]. The workshops thus revealed that the political power of speculation lies not in predicting what might come, but in transforming what is already shared.

4.4 The role of the designer-researcher

Within the research process, the role of the designer was configured as a situated, sensitive, and reflexive mediation that accompanied the emergence of figurations over seven months, without imposing them as predefined analytical categories. The position of the designer-researcher deliberately departed from extractive or instrumental logics of design, orienting instead towards the creation of conditions in which participants' knowledge, memories, and experiences could unfold collectively.

Rather than directing or controlling the process—and acknowledging the researcher's own situatedness as part of the community—the work consisted in designing and sustaining the material, spatial, and temporal devices that enable experimentation, dialogue, and shared reflection. From this perspective, design operated as a relational practice that facilitated encounters, tensions, and negotiations across generations, positions, and ways of inhabiting the territory.

At the same time, the designer-researcher assumed an ethics of attentive listening and responsibility towards the narratives that emerged, recognising participants as co-producers of knowledge

rather than sources of information. This stance required continuous attention to power relations embedded in participatory processes, as well as critical reflection on methodological decisions. In this sense, the designer-researcher operated simultaneously as facilitator, observer, and participant, articulating design practice with reflexive writing to account for how figurations contributed to the redistribution of agency, the construction of shared meaning, and the production of critical knowledge within the research.

5 CONCLUSIONS

The experience in Chía demonstrates that figurations can arise naturally when participatory design prioritises agency and situated making. They are not pre-established frameworks but emergent conditions that materialise through practice. As participants gained control of the process, their acts of sewing, assembling, and displaying became figurative gestures—embodied ways of rethinking participation, care, and belonging.

The implications of this approach extend beyond the specific context of Chía. Figurations invite participatory designers to rethink facilitation as a practice of staying with the emergent—sustaining spaces where form remains provisional and meaning is negotiated through material engagement. This orientation does not reject structure but proposes another kind of rigour: one grounded in sensitivity, iteration, and the ethics of response.

This suggests a methodological inversion: instead of introducing figurations as conceptual tools, participatory design can generate them by enabling conditions for community agency. Figurations then become evidence of transformation—signs that participation has moved from consultation to co-construction, from representation to presence.

Designing from the figure, not from the model, thus means designing with uncertainty, affection, and plurality. It implies acknowledging that imagination and action intertwine, and that communities already possess the capacity to shape their own commons through the material and the sensible. The case of Chía invites

participatory design scholars to reconsider how methodological openness and material engagement might allow new forms of collective authorship to emerge.

In contexts where participation has often been reduced to procedural validation, these acts of figuring remind us that imagination itself can be a form of governance—a way of shaping the social and spatial present through shared gestures of care. If participatory design is to remain transformative, it must learn from such moments—when agency becomes tangible, and when making together figures the possible. As the women of Chía showed, to make is already to imagine otherwise.

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From Hermeneutical Injustice to Collective Imagining: Troubling Feminist Co-Design in Women's Health

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Abstract

Technology advancement and policy change currently dominates the solution space for women's healthcare, although bias and political primacies challenge this development. This paper argues that many harms in women's healthcare are epistemic, drawing on feminist philosophy to examine how hermeneutical injustices limit women's ability to articulate and legitimise their lived health experiences. We position participatory design as a critical response to this injustice, not as a solutionist intervention, but as a means of expanding shared meaning-making. Hermeneutic injustice and feminist participatory design are particularly aligned in basis, although are at present limited by resources and scope. To enact a more accessible version of participatory healthcare design in the UK, the NHS' co-production faculty: Patient and Public Involvement and Engagement (PPIE), is proposed as an emergent facility to collect diverse sets of lived experience. 'Troubling' is introduced as a feminist framework and design methodology that foregrounds disruption, speculation, and collective imagining in women's health. By reimagining PPIE as a feminist, participatory infrastructure, this paper contributes a framework for embedding epistemic justice within healthcare co-production and participatory design practice.

CCS Concepts

• **Human-centred computing**; • **Human computer interaction (HCI)**; • **HCI theory, concepts and models**;

Keywords

Women's health, Hermeneutical injustice, Feminist design, PPIE

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1 INTRODUCTION

Women's healthcare has garnered recent public and political attention, trending across vast media that spotlights medical misogyny, into governmental shifts towards women-specific investment and initiatives [1, 2]. In the UK context, it has rightly attracted funding (including £25 million/~€ 28 million to the creation of women's health hubs) supported through emergent policy, highlighting the additional social and economic benefits to such investments [3-6]. This reflects other international progress in women's health, including Australia's national women's health strategy [7], abortion becoming a constitutional right in France in 2024 [8], and large-scale investment in HPV vaccination, supported by the governments of Indonesia, Pakistan, Papua New Guinea, Samoa, South Africa and Spain [9]. However, there is no global unification in this progression: arguably, France's law enshrinement was in response to the overturning of the Roe v. Wade case in 2022, signalling a decline in abortion rights for women in the U.S.. Furthermore, the need to centre women's healthcare in itself, combined with regressions thereof, echo wider systems of inequity around work, access and rights that challenge women's equality on a systemic level [2].

On top of the re-structuring of clinical research towards women's health [10], solutionist design is at the forefront of tackling inequality based on gendered lines [11]. Technological growth in Femtech, including wearables and AI, in both diagnostic and population data capacities, is being harnessed for topics such as menstrual health and violence against women and girls [12, 13]. However, the accuracy and performance of these developments appear to vary substantially across intersectional lines, such as race and ethnicity. [14]. These innovations can be referred to as 'solutionist' designs, in that they identify an aspect of women's health as a problem requiring a solution. This is a distinct ontology, in rationalising that people and needs are *solvable* [15]. Whilst this may have currency for encouraging novel technologies, it is evident in terms of implicit biases that such 'problems' involve complex, systemic features that often resist clean-cut solutions. Feminist discourse may describe such problems as 'troubles' [16-18].

Monetary and clinical investment into both medical research and Femtech offers avenues to counter health injustice for women, however, they do not necessarily ensure societal shifts towards equitable health. As seen in instances of political shift, health decline can be caused through policy change, limiting the social momentum for many women-specific causes [19]. What is required, alongside increases in research and innovation, is a reintegration of women's health concerns within the bones of a system [11, 20]; to prioritise these needs at their societal, philosophical foundation, aside from

the dominating ‘technochauvinist’ remit as Broussard might describe it [21]. To do so, it is imperative to call upon other modes of doing and thinking, especially those that explore inclusive and inspirational forms of being and living together.

2 EPISTEMIC INJUSTICE

In understanding why health inequality takes place, it is possible to draw from organisational, systemic, patriarchal, political and philosophical reasoning for why women suffer so much medical misogyny [17, 22–25]. Misdiagnosis and gender bias are a huge ‘trouble’, and it is far beyond the scope of this paper to provide a comprehensive rationale for why this is the case. This paper aims to align participatory health research with epistemic philosophy to understand the conditions for elevating women’s voices and stories in the first place. Specifically, to answer why some knowledges are not valued as much as others in these contexts, and are therefore disregarded. This refers to epistemic injustice (EI), a concept largely attributed to Miranda Fricker, occurring when one’s knowledge is not deemed credible [26].

Within healthcare contexts, ‘testimonial injustice’ is the most widely recognised of Fricker’s contributions, which refers to the way ill people are seen as unreliable narrators, perceived to be lacking lucidity by medical professionals [27, 28]. Testimonial injustice occurs on a spectrum; voices may be entirely ignored, or they can be heard, recognised, but not deemed as valuable. This presents particular concern for women’s health, when third-person reports are prioritised over anecdotal evidence, leading to the trivialisation of women’s pain, disenfranchisement, and at worst, severe miscarriages of justice [23, 27–34].

‘Hermeneutical injustice’ is also a significant element of EI, and describes when patients are unable to appropriately communicate their experiences and have ‘bodily doubt’ [35]. This is either because the concept of what they have experienced does not exist within social phenomena, or there are inherent communication difficulties when describing health conditions [26, 35]. Patriarchal norms significantly pervade knowledge exchange, and Fricker uses the following examples to explain hermeneutical injustice: the term ‘sexual harassment’ has not always existed, and post-partum depression has not always been recognised as legitimate [26].

There is a body of literature that signals EI in women’s healthcare contexts, especially in the disciplines of Nursing and Medical Ethics [29, 31–34]. Intersectionality theory underscores many of these studies, implicitly acknowledging how systems of race, gender and class impact the phenomena individuals interact with, and thus that forge one’s ontology [36]. This inclusion, or perhaps awareness, aligns with feminist participatory design philosophy and practice that centres intersectional voices [18, 37, 38]. But even more so than this aspect, these medical-based studies offer *design* insights. In the Freeman paper, for example, ultrasound technology is being investigated as more credible than the pregnant knower, offering an examination of power and ‘techno-chauvinism’ at a patriarchal level [21, 31]. Design theory has only recently offered a shift towards using EI theory to bolster marginalised voices in participatory engagement [39]. However, the connection between hermeneutical injustice and a lack of communication resources in women’s health research has not been made. Nor have co-design

methods been offered as opportune to counteract this philosophical (and yet very tangible) trouble. Before considering this, it is essential to address the context in which this may occur.

3 CO-DESIGNING HEALTHCARE

3.1 Patient and Public Involvement and Engagement

In the UK context, PPIE¹ is the institution-led co-production facility used to improve how public services take into account user needs. It is thus a core component of the 2022 Women’s Health Strategy for England, a government strategy that spans 10 years [4]. PPIE is largely approached through Experience-Based Co-Design, and considers the negotiations and experiences of patients, as well as staff and carers, to then be transformed into service improvements [40–42]. In practice, this might include lived-experience panels, workshops, field visits, idea generation and shared decision-making [43, 44]. Importantly, PPIE represents a step away from generalised feedback on services and a step towards longer-term design of patient entanglement with medical services, with alignment to co-design practice. However, this is contested in its present capacity, ranging from a tokenistic, extractive practice to more sustained, long-term co-production [45–48]. There is therefore an interesting opportunity in PPIE for building social capital and trust between patients and institutions, cited as key to ensure non-reductive engagement practices with women’s healthcare [45, 47]. However, there is no specific guideline or interrogation of how this can be ontologically reimaged.

As with feminist participatory design, PPIE is focused on lived experiences to inform knowledge [47]. This democratic outlook serves to benefit diverse sets of stakeholders, in order to encapsulate authentic, accurate depictions and understandings of health experiences [49]. This means paying particular attention to marginalised groups and intersectionality within women’s healthcare, to include voices which haven’t been attended to. Investigations into the barriers underrepresented groups face when engaging with PPIE have been explored, as well as the benefits patients and institutions stand to experience [46, 47]. These include physical and emotional attendance burden, but on the other hand, the opportunity to personally reframe difficult health experiences and achieve fair compensation.

In a broader sense, PPIE is useful for interrogating how and why inequalities exist on a systemic level, whilst maintaining the value of lived experience for all public and patients engaged in NHS-led co-production. This opens the scope for understanding beyond health narratives, and into wider life courses: to map how work, education, and community intersect to impact individual decision making and opportunities. To do so in the context of gender, however, Søndergaard argues: “the complexity and sensitivity of women’s health require us to reimagine which design approaches...are more appropriate”, and thus not to rely on engagement methods that work for a public of all [18]. From a methodological standpoint, this provocation highlights a need (or possibility) to restructure methods towards women-specific requirements. This would enable PPIE to become more responsive to the political, structural and

¹Patient and Public Involvement and Engagement

epistemic constraints of knowledge sharing, resulting in richer, more appropriate engagement.

3.2 Participatory Design in Healthcare

In the HCI sphere, co-design takes an alternative approach to that of Femtech and policy drives in countering women's health inequality. In contrast to PPIE practices, it is positioned to generate knowledge on the present but also the future [50, 51]. Inclusive, equitable outcomes are factors built into the fabric of generative co-design. This mode of praxis was proposed as an interdisciplinary approach for social justice ends by Scandinavian designers in the 1970s, continuing to influence participatory design to this day [51–53]. Co-design has been convincingly popularised by Sanders & Stappers, who note the role of this approach in healthcare contexts [54]. Participatory design, in broader terms, depends on lived experience, presenting it as a sensitive mode of enquiry, particularly through a Research through Design angle [18, 50]. It also pulls together diverse sets of generative tools that can be adapted for stakeholders and environments, and is thus capable of collating intimate knowledge on patient experience, patient-doctor relations and institutional trust [54, 55].

Feminist participatory design is a proponent of design as a continual practice to integrate *within* systems, as opposed to becoming the solution *to* systems [18, 37, 53]. Methods oriented towards speculative future-making are notably employed [56, 57]. In healthcare contexts, this has involved storytelling through DIY techniques, ideation cards, as well as scenario creation [58–61]. In the case of Michie et al's work [61], digital storytelling was used to generate knowledge on abortion rights in Ireland, and was found to enable polyvocality (and thus organised collectives) among stakeholders. Not only does this study explore how design methods can encourage community mobilisation, but it also engages with diverse sets of opinions and lived experiences of abortion. Design in this case is not used as a means to form solutions, but as an instrument of sustained inquiry. This promotes feminist participatory design as able to engage stakeholders in evocative ways, beyond informing techno-solutions.

When generating knowledge, Research through Design maintains that it must be shared to have legitimacy as a research outcome [50]. Furthermore, knowledge in this school of thought is understood as informing one's future outlook or decision-making. This means that creating knowledge for a designer's benefit is not a sufficient use of this methodology. And so, whilst it could be argued that PPIE needs to become more intentional to serve its stakeholders' needs, so does participatory design need to become accessible to increase its impact. Accessibility in this sense refers to the capacity to extend knowledge beyond the group that co-designed the research. In healthcare contexts, this means: increased ownership over services, more voices being deemed as credible, and shared resources for collective imagining about desirable futures.

4 PARTICIPATORY DESIGN AND HERMENEUTICAL INJUSTICE

There is a sensical focus on applying participatory design methods to counter hermeneutical injustice, for both theoretical and practical reasons. The first is that communication is a key restriction in

conveying health concepts, due to practical reasons (e.g., language, confidence) as well as systemic limitations (e.g., social meaning-making) [33, 62]. Generative co-design, however, is an iterative process that offers multiple ways to communicate knowledge; for example, through cultural probes, making and performance [55]. This means that researchers can make distinctions on methods that are particularly salient or culturally relevant for different participants, as well as opening up knowledge creation through visuals and artefacts [50, 63, 64]. Secondly, participatory design is dependent on lived experiences, and by extension, feminist theory centres marginalised voices, who are further wounded by hermeneutic injustices [18, 36]. In this, there is a key philosophical alignment in EI research and co-design practice. Lastly, co-design encourages speculation, meaning the proposing and prototyping of visions for the future [51, 65]. Within a women's health context, there is a plausible opportunity to engineer theory into reality. This presents a way of bringing difficult-to-articulate concepts (hermeneutical injustices) into the world, in a sense that is both sincere and equity-focused. In terms of design contribution, this is a social justice-minded endeavour that extends beyond traditional product-, service-, or policy-design outputs [53].

5 TROUBLING FOR HERMENEUTICAL INJUSTICE

In practice, tackling philosophical endeavours could be achieved through different participatory practices. However, as described in the previous section, a social-justice minded, feminist framework would offer particular benefit in the women's-health field. There is a developing paradigm of design approach, namely 'troubling', that resists problem-solving and is based on Research through Design and feminist theorists, including Donna Haraway [16] and Sara Ahmed [17]. Troubling as a healthcare methodology challenges stigma and health inequalities through disruptive, speculative artefacts. It is situated towards intimate and tabooed topics, as well as activist tools and provocations [18]. In committing to 'troublings', instead of applying technological fixes to 'problems', design can "cultivate capabilities among participants to hack into reality itself" [66]. To phrase this differently, 'troubling knowledge' can be described as research to critique current worldviews, and so 'troubling design' offers a creative lens in how alternative(s) may be nurtured [18]. It is a mischievous yet intentional approach, that excavates lived experience in a manner that welcome 'wrongs': concepts that do not fit conventional, patriarchal understandings of the world [17, 18]. Such meaning-making is not objective and will be informed by different cultures and world views, lending itself to an intersectional inquiry of health inequality.

Furthermore, there is a disruptive intention to welcoming 'wrongs' in health research that is philosophically grounded in epistemic injustice literature. When considering marginalised knowledge systems, a phenomenological outlook validates its legitimacy; if we are to follow that our knowledge is pre-verbal/ felt /situated in the body, then each individual testimony must be regarded as epistemically correct [27, 36, 67]. This offers a philosophical affirmation to a co-design positionality that is rooted in the value of lived experiences.

It is useful to understand what Søndergaard's troubling framework might look like in practice. Troubling design requires the following outlooks: 1. 'Staying with the wrong': Identifying pervasive stigmas in women's health and using these as markers of 'wrongs' that must be tackled; humour encouraged. 2. 'Curious visiting': Exploring new meaning-making capacity through fictions and lived experiences to counter current interactions with health technologies. 3. 'Collective imagining': Speculating on both best- and worst- case future scenarios, and therefore the action needed in the present to attend to these visions. This reintroduces a potential for change to stakeholders.

Whilst these practices are not linear steps, they are frames and guides for conducting troublesome, context-significant design in women's healthcare [18]. The project 'Ingrid: A Woman Living with Electromagnetic Hypersensitivity' is one example that particularly employs 'curious visiting'. It is also a study that particularly attests to a hermeneutic injustice. Electromagnetic Hypersensitivity (EHS) is a syndrome that causes discomfort and pain, occurring when individuals are exposed to electromagnetic fields [18]. The symptoms are medically recognised for those affected, however it remains widely regarded as a psychosomatic condition. The study employed ethnographic methods and cultural probes, and discovered novel relations between IoT, wellbeing, family and identity for particular medically-marginalised people. In resisting a technosolutionist approach, this study gave due attention to the lived experience of 'Ingrid' as legitimate, despite the medical disbelief of EHS. More than this, it troubled the connection between technology evolution and healthy living, to inspire reflection on non-dominant interactions, in order to question and build alternative visions for the sharing of the world with technology and others.

This example does not consider diverse sets of stakeholders in practice, nor does it prototype on troublesome futures. However, it does demonstrate how the troubling framework can offer an affirmative, feminist outlook on knowledges that are not deemed as medically credible. Furthermore, there is opportunity to apply diverse methodologies to a subject area, dependent on suitability to the stakeholder: we can observe the use of more intimate tools (participant observation, cultural probes and interviews) in the 'Ingrid' study, and more disruptive prototyping and performance in Søndergaard's other 'troubling' demonstrations [18]. Thus, there is ample scope to apply differing modes of enquiry in co-design practice, in order to appropriately engage diverse sets of perspectives. When directed towards group engagement and artefact creation, it satisfies the communication resource aspect of hermeneutical injustice, by judging the elicitation capacity of each method. As a wider impact, conducting this type of work contributes to a collective voice in women's healthcare, that of tensions and opportunities; reflecting on different subject areas reveals the gaps of what is not yet understood, and therefore vibrations of inherent hermeneutical injustices.

6 WHAT THIS MEANS FOR A FUTURE OF PPIE

To return to the origins of this paper, explicitly the civil dimensions to women's health innovation, troubling design is not necessarily an apolitical outline for achieving equitable outcomes. Further, in order to have wide impact, the knowledges created through health

co-design must be shared, and not exist solely within academic spheres [50]. And so, the challenge of creating a programme that is resistant to political dismantling, but wide-reaching enough to impact public lives, is presented.

A large-scale vision would be to reorganise co-production in the NHS to become intentionally feminist. To stitch 'troubling' into the fabric of PPIE so to prioritise women's healthcare in a sustainable, empathetic way. Many of the values that the NHS' Women's Health Strategy proposes, alongside the 10-year Health plan, such as reflexivity and the centering of marginalised voices, are shared with this co-design vision, and yet a reshaping of PPIE's philosophy, design and operation would remain necessary [4, 6, 68]. The suitability of this visualisation to the NHS context is due to its positioning of lived experience as a useful resource. Importantly, PPIE offers a vision to a possible healthcare system; more than administering care, a commitment to the public confirms it has not exhausted its efforts to improve patient experience and wellbeing. Whilst wellbeing is not a commodity to be given, design can serve as the means to support and enable its realisation.

In practicality, this would mean developing co-design methods by producing case studies of key women's health concerns and subjects, to provide guidelines on methodologies that would (and would not) serve to benefit different groups. This would result in shared, yet distinct, resources for collective imagining about desirable futures, aligning the practice and insights from design and epistemic injustice research. Resources, however, would need to be attuned to the very practical considerations of women in health research, including the work and care burden, cost, transportation, energy and stigma; barriers of which perpetuate intersectional knowledge gaps [68, 69]. These are logistical features that the troubling framework admits need closer inspection, if it is to be developed and applied at a national scale.

In future research of PPIE and more disruptive versions of co-design, other actors may be incorporated. For example, Hvidt et al present how General Practitioners (GPs) are extensions of medical institutions that are both culturally solutionist and evasive of the spiritual dynamics to healthcare [70]. To reframe this as an opportunity, identifying these structural obstacles is the first step in plausibly overcoming them. Moreover, they become a 'wrong' that can be 'stayed with', opening this new realm of PPIE to actors beyond patients. We might ask what troubling could do for doctors and institutions, if the baseline healthcare vision is reorientated to lived experiences and epistemic justice.

7 CONCLUSION

In aligning hermeneutical injustice theory with new paradigms of feminist, participatory design, the primary aim is to counter epistemic-based health injustice. Specifically, this looks like developing new communication resources to bring lived experiences to the fore of knowledge production and co-produce new visions for desirable futures. In the UK, PPIE offers an institutional faculty to 'trouble' knowledges, and harness collaborative imagining on women's health. Importantly, the mode of design is distinct from traditional outputs (e.g., products or services) and instead focuses on long-term collaborations between institutions and its users.

The two realms of thought and practice already share notable features, including communicating knowledges, a focus on lived experience, and a sense of temporality when considering concepts that are understood by general publics. PPIE also lends itself to these themes, but in actuality is achieved in varying degrees [45]. By applying a participatory, feminist philosophical grounding to an NHS-led department, it becomes a system of civic responsibility towards equitable living.

There are many features to test and understand in order for this to become a feasible proposal. In its political roots is the challenge of sustaining a troublesome vision, especially for a fragile subject area such as women's health. The ambition to create hermeneutic tools requires multiple case studies, and likely interdisciplinary advisory. Furthermore, practical and logistical considerations will be vital to create accessible and desirable versions of co-design. Lastly, in extending outcomes beyond products and services, design becomes less tangible, presenting a challenge for measuring impact and change. Despite these obstacles, this paper's speculation for a feminist-minded PPIE is necessary if government bodies are sincere about improving women's healthcare. Repeating established approaches, in anticipation of new outcomes, carries little weight in a field where generating appropriate innovation is in such high demand.

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Staging Futures-in-use

An exploratory format for Participatory and Experiential Futures

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Abstract

This paper introduces *Tomorrow's Trade Fair*, an exploratory format developed to extend participatory design practices into the domain of experiential futures. While participatory design emphasizes collaboration in shaping systems and services, and participatory futures aim to democratize long-term visioning, futures often remain at the level of abstract scenarios. Experiential futures approaches address this by staging immersive situations and artefacts, but less attention has been given to how these practices can be combined into structured formats that also enable critical evaluation through public engagement. *Tomorrow's Trade Fair* responds to this gap by presenting a four-phase process: co-creation of scenarios, prototyping artefacts, embodiment through role-play, and dissemination in a staged trade fair. Piloted in an academic setting with postgraduate students, the format positions participants as both designers and researchers of *futures-in-use*, situations in which imagined futures are enacted in the present through prototypes, practices, or role-play. This dual role enables critical reflection on the assumptions embedded in future visions while engaging audiences in dialogue that reveals hidden implications and allows for scenarios to be reshaped. The paper contributes to participatory design by framing dissemination as an integral stage of *futuring*, highlighting how responsibility, criticality, and evaluation can be embedded within collective practices of imagining and enacting futures. It also suggests how formats like *Tomorrow's Trade Fair* can be transposed from educational contexts into community, institutional, and organizational settings as replicable frameworks for responsible futuring.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design; Interaction design; Interaction design theory, concepts and paradigms.

Keywords

participatory futures, experiential futures, embodied futures, futures dissemination, responsible futuring

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1 Introduction

Participatory design has long emphasized the involvement of diverse actors in shaping sociotechnical systems [1, 2]. Over time, the field has increasingly acknowledged that co-creation is not only about designing systems and services but also about extending design imagination towards possible futures. As futures-oriented approaches have entered this space, the question has shifted from who designs to who imagines and who enacts possible futures.

Within this context, the field of Participatory Futures [3] seeks to democratize futuring practices by inviting participants into processes of collective imagination. At the same time, the field of Experiential Futures [4] demonstrates how scenarios can be embodied and lived through immersive situations, performances, and artefacts.

This paper introduces *Tomorrow's Trade Fair*, an exploratory format that combines these two trajectories. Developed in an academic setting as a pilot with postgraduate students in Interaction, Product and Service Design, the format is positioned as a testbed with broader applicability. It combines participatory futures' emphasis on collaboration with experiential futures' focus on embodiment, staging what we call *futures-in-use*: situations where imagined futures are enacted in the present, through prototypes, practices, and role-play, so that people can experience and interrogate them directly. In this way, futures are not merely discussed abstractly but become tangible, immersive, and debatable encounters [5].

The contribution of *Tomorrow's Trade Fair* lies in its four-phase process: co-creation of scenarios, prototyping artefacts, embodiment through role-play, and dissemination via a public trade-fair exhibition [Figure 1]. This cycle transforms futures from abstract visions into situated experiences, where participants act as both designers and researchers of *futures-in-use*. This dual role foregrounds not only creativity but also reflexivity, as participants must interpret how their imagined futures are received and questioned by others. The format creates conditions for dialogue with external audiences, enabling scenarios to be tested, critiqued, and reshaped through lived engagement.

By framing dissemination as an integral stage of *futuring*, *Tomorrow's Trade Fair* addresses a key limitation in participatory design and futures work: the tendency to stop at visioning or prototyping without evaluating futures in public. Here, dissemination is not an



Figure 1: Design workshop space for a trade-fair-style exhibition, with prototyping materials for future artefacts and printed templates for exhibition setup and participant evaluation.

afterthought but a deliberate step where responsibility and accountability are emphasized. It becomes a moment where participants critically position themselves within the scenarios they present and reflect on their implications.

The paper makes two main contributions. First, it offers a detailed account of Tomorrow's Trade Fair as a methodological prototype that expands participatory design into responsible futuring practices. Second, it reflects on the implications of positioning participants as both co-creators and researchers, highlighting how such formats open new pathways for engagement with communities, institutions, and organizations.

2 Participatory and Experiential Futures Landscape

In participatory design, the emphasis has traditionally been on enabling users, stakeholders, and communities to take an active role in ideation, design, and evaluation, shaping both the process and its outcomes [1, 6]. More recently, this participatory ethos has extended into the domain of futures studies, giving rise to what Ramos [3] terms Participatory Futures: processes that democratize futuring by involving diverse participants in visioning and sense-making. Within this trajectory, Design Futures practice [7] increasingly seeks not only to imagine collectively but also to make futures tangible and discussable.

2.1 From design fiction to experiential futures

Julian Bleeker's [8] early work on Design Fiction highlighted the role of artefacts from the futures and diegetic prototypes [9] in creating believable near-future worlds. Building on this, Dunne and Raby [10] extended speculative design to explore *what-if* scenarios through critical artefacts. Yet while these approaches emphasized the artefact as provocation [11], they fairly often left the audience outside the scenario itself, positioned as observers rather than participants. Stuart Candy and Jake Dunagan [4] argued for a shift to Experiential Futures, where scenarios are staged as situations

to be inhabited, lived, and embodied, extending design fiction into immersive, multi-sensory practice [12]. This moves from artefact-as-provocation to experience-as-engagement marked an important methodological expansion, bringing futures closer to lived experience.

2.2 From guerrilla interventions to ambient artefacts

Stuart Candy's guerrilla project [13] *Tomorrow's Energy Today* [14] exemplified how futures can be inserted directly into everyday settings, challenging bystanders to encounter alternative possibilities *in situ*. These ambient artefacts blur the boundary between speculative and real, producing encounters that provoke dialogue in public or curated contexts [14]. The strength of this approach lies in its ability to surprise and unsettle, inviting reflection both in ordinary environments and managed settings. Elliott Montgomery [15] similarly explores how contextualized future artefacts can be strategically placed in environments, transforming dissemination into situated engagement. Here, artefacts act not only as communicative devices but as catalysts of inquiry, enabling audiences to experience futures through direct confrontation with objects that appear embedded in their world.

2.3 From futures games to futures jams

Alongside artefact-based approaches, playful and collective formats have emerged to enable collaborative exploration of futures. Futures Games [16, 17] use structured play to make abstract scenarios actionable and discussable, fostering shared dialogue in a low-risk environment. Montgomery's *Futurematic* jams [15] and Candy's *The Futures Bazaar* [18] both demonstrate how short, intensive events can scaffold participant creativity, producing speculative artefacts for public sharing and dialogue. These futures jams emphasize speed, improvisation, and accessibility, while still yielding insights about participants' imaginaries. In this sense, they function as laboratories of imagination, where multiple speculative directions can be prototyped quickly and compared side by side.

2.4 Toward Tomorrow's Trade Fair

Tomorrow's Trade Fair situates itself within this landscape by combining Participatory Futures and Experiential Futures into a single embodied format. Inspired by The Futures Bazaar, it likewise culminates in a public-facing event; like guerrilla interventions, it uses ambient artefacts to engage outsiders. Yet it extends these practices by explicitly framing participants not only as creators but also as researchers of *futures-in-use*, situations in which imagined futures are *enacted in the present* so they can be experienced and questioned [Figure 2]. In doing so, it bridges the gap between imagination and evaluation, highlighting how enacted futures can serve simultaneously as creative, performative, and critical processes.

3 Staging Futures-in-Use

Tomorrow's Trade Fair is structured as a one-day (or two-day) intensive format combining elements of a design workshop, a futures jam, and a public exhibition. Conceived as both a pedagogical exercise and a methodological prototype, it provides a replicable format for participatory futures engagements with students, communities,



Figure 2: Student role-playing within the exhibition setting, presenting future products and collecting feedback from trade participants.

or organizational teams. Its hybrid character is intentional: it compresses processes of ideation, prototyping, and dissemination into a compact timeframe, while still creating space for reflection and iteration. The design of the format reflects what Ramos [3] has called Participatory Futures, emphasizing collaborative authorship of long-term imaginaries, while drawing on the immersive practices of Experiential Futures [4, 13].

The format unfolds in four phases, corresponding to a cycle of co-creation, embodiment, dissemination, and evaluation:

- **Collective orientation.** Participants are introduced to the goals and principles of participatory and experiential futures. The framing emphasizes the dual role of participants: to act both as designers of speculative artefacts and as researchers of futures-in-use. This stage establishes a shared vocabulary and aligns expectations, ensuring that participants approach the activity not only as makers but also as reflexive agents of the futures they build.
- **2. Scenario and artefact generation.** An online generation engine serves as a creative catalyst. Through randomized prompts combining societal issues, temporalities, and speculative twists, participants collaboratively construct future scenarios. Teams then translate these into future prototypes—provisional objects, services, or media fragments that embody their scenarios. This aligns with Design Fiction’s use of speculative artefacts and diegetic prototypes [19] but situates them in a co-creation frame. By foregrounding collaboration, the process reduces reliance on individual creativity and instead produces collective imaginaries that are richer and more diverse.
- **3. Embodiment through prototyping.** Teams refine their prototypes into artefacts intended to appear as if they had been brought back from the imagined setting. Material improvisation and rapid iteration are encouraged, underlining the embodied and performative dimension of the process [4]. Here the artefact functions less as a provocation and more as a vehicle for encounters, mediating dialogue between



Figure 3: Student-designed exhibition setup for a future product, with a promotional poster, demo video, prototype, quick start guide, and a QR code for online participant evaluation.

participants and potential audiences [6]. The emphasis on embodiment ensures that the artefacts carry traces of lived practice, making them not just conceptual provocations but touchpoints for situated discussion.

- **4. Public trade fair.** The workshop culminates in the staging of an immersive environment, a trade fair of tomorrow. Participants role-play as exhibitors, presenting and selling their artefacts to visitors. This resonates with Candy’s The Futures Bazaar [18], where participants become performers of possible futures, creating situations that audiences can inhabit [Figure 3]. The performative dimension not only disseminates scenarios but also generates live opportunities for evaluation, as reactions, negotiations, and critiques are observed and documented.

3.1 Pedagogical and methodological layers

In the academic testbed, postgraduate students from interaction, product and service design programs enacted these roles. The exercise not only allowed them to practice futures methods but also served as a live evaluation of how audiences encounter speculative artefacts. In this sense, *Tomorrow’s Trade Fair* embodies a double logic: it is both a learning experience and a methodological prototype. As pedagogy, it supports students in developing skills of imagination, prototyping, and critical reflection; as methodology, it offers a replicable structure for engaging diverse groups in constructing, enacting, and interrogating futures. Following Montgomery’s Futurematic and Candy’s immersive interventions, it highlights how such a format could be scaled to communities, institutions, and organizations as a tool for participatory futures that are both lived and evaluated.

4 Learning from Tomorrow’s Trade Fair

The implementation of *Tomorrow’s Trade Fair* generated three sets of insights that are instructive for participatory and experiential futures. These relate to the roles of participants, the responses of audiences, and the responsibilities embedded in dissemination:

1. **Participants as co-creators and researchers.** One of the most notable outcomes was the transformation of participants into dual-role actors. They were not only co-creators of future visions but also researchers of futures-in-use, responsible for observing and interpreting how outsiders encountered the scenarios. This dual positioning heightened participants' awareness of the constructed nature of their visions, enabling critical reflection on both process and product. Rather than treating futures as finished outputs, students experienced them as provisional hypotheses subject to evaluation and revision. This shift fostered a deeper self-reflection: participants recognized that their role did not end with creation but extended into stewardship, monitoring how speculative artefacts mediated dialogue and where they might need adjustment.
2. **Audience engagement as revelation and adjustment.** The reactions of visitors to the trade fair revealed unexpected implications of the proposed futures. Some artefacts provoked enthusiasm, while others elicited skepticism or concern. These encounters surfaced latent assumptions and unintended consequences embedded in the scenarios, which might otherwise remain invisible in a closed workshop. Audience engagement thus functioned as a feedback mechanism that allowed participants to mitigate potential impacts and reshape their futures accordingly. This echoes Montgomery's emphasis on dissemination as a form of contextual inquiry and Candy's guerrilla interventions, where futures are stress-tested in public. In this sense, the audience was not passive but became an active element of the design research, exposing blind spots and generating new questions.
3. **Dissemination as responsibility.** Finally, *Tomorrow's Trade Fair* demonstrated that dissemination is not merely a communication stage but a space of ethical positioning. By staging futures in public, participants became responsible for how these futures were shared, interpreted, and debated. This extended participatory design from co-creation toward *responsible dissemination*, situating designers and participants as accountable interlocutors within the future visions they put forward. The performative staging of futures required participants to anticipate potential misinterpretations and to position themselves critically in relation to the imaginaries they created [Figure 4]. The experience resonated with calls in participatory design to foreground criticality and responsibility in practice [10].

Taken together, these insights suggest that participatory and experiential futures formats such as *Tomorrow's Trade Fair* are not only pedagogical or methodological experiments but also platforms where futures are lived, critiqued, and ethically negotiated. They demonstrate how speculative practices, when staged as futures-in-use, can simultaneously generate knowledge, provoke dialogue, and surface responsibilities.

5 Toward Responsible and Situated Futuring

The implementation of *Tomorrow's Trade Fair* raises several broader issues for participatory design and design futures practice. These concern the enrichment of participatory design through futures



Figure 4: Students accepting orders for future products from trade fair participants after presentation.

practices, the ethical responsibilities of staging futures in public, the methodological opportunities and challenges of hybrid formats, and the relationship between pedagogical testbeds and real-world contexts:

1. **Expanding participatory design through experiential futures.** Participatory design has traditionally focused on co-creating artefacts, systems, or services in the present. By integrating participatory and experiential futures, *Tomorrow's Trade Fair* demonstrates how participatory design can be extended into the domain of long-term imagination. Here, participation is not limited to co-creation, but expands into embodiment, dissemination, and meaning production.
2. **Ethical responsibilities of staging futures.** Placing speculative artefacts and scenarios in public brings ethical questions into sharp focus. Participants in *Tomorrow's Trade Fair* were confronted with the responsibility of how futures are represented, shared, and debated. Futures become not only design outcomes but also ethical propositions that invite negotiation among diverse audiences. This suggests that futures practitioners must consider not only what kinds of futures are worth pursuing, but also who is affected and thus included, and what risks or unintended consequences may arise when futures are circulated beyond the design space.
3. **Methodological opportunities and challenges.** Hybrid formats such as *Tomorrow's Trade Fair* highlight methodological opportunities: they provide replicable structures for collaborative imagination, combine material prototyping [19] with performative engagement, and generate evaluative feedback through audience reactions [Figure 5]. At the same time, challenges remain. Scaling such formats beyond controlled academic settings requires careful adaptation to organizational cultures, community contexts, and resource constraints. Moreover, the format depends on both participant willingness to perform and audience openness to engage, which may vary significantly across settings. The balance between improvisation and structure is also delicate:



Figure 5: Purchase Order Form used in student role-playing to operationalize the trade-fair metaphor, elicit discursive dissonance, and express appreciation through purchase-order volume [21].

too much freedom can overwhelm participants, while too much scaffolding can constrain speculative exploration.

4. From pedagogical testbed to real-world application.

The academic testbed provided a valuable proving ground, enabling postgraduate students to experiment with futures methods in a supportive environment. Yet the broader significance of *Tomorrow's Trade Fair* lies in its potential application beyond academia. Transposed into civic, institutional, or organizational contexts, it could serve as a platform for collaborative futuring [20] that is simultaneously imaginative and evaluative. The tension between controlled pedagogical experiments and open-ended real-world engagements highlights the need for further research into how such methods translate across settings. Taken together, these points suggest that participatory and experiential futures formats are not only tools for creativity but also for dialogue, responsibility, and critical dissemination.

6 CONCLUSION

Tomorrow's Trade Fair contributes to the evolving repertoire of participatory design by integrating practices from participatory and experiential futures. Rather than limiting participation to visioning exercises, the format demonstrates how futures can be co-created, enacted, disseminated, and evaluated in ways that foreground embodiment and lived engagement [4, 5, 14].

A central insight of the format is the positioning of participants as both designers and researchers. This dual role fosters a deeper awareness of the assumptions embedded in future scenarios, while also cultivating responsibility for how these scenarios are staged and received. By inviting external audiences into the process, *Tomorrow's Trade Fair* transforms dissemination into a critical site of reflection and negotiation, echoing broader calls in participatory design to embrace responsibility and criticality. Here, dissemination becomes not the end of a process but a generative moment where scenarios are interrogated, challenged, and reshaped.

As a pedagogical testbed, the format offers valuable lessons for education. Yet its broader contribution lies in its potential to be transposed into community, institutional, or organizational contexts as a replicable framework for responsible futuring. In these settings, it can serve as both a catalyst for collective imagination and a mechanism for scenario evaluation, surfacing ethical questions, social tensions, and possible pathways of change. In this sense, *Tomorrow's Trade Fair* illustrates not only how futures can be imagined but also how they can be critically rehearsed and reshaped in dialogue with others.

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Meandering as Praxis: Participatory Designing in Entangled Coexistence

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Abstract

This paper theorizes *meandering* as a durational, participatory design praxis that resists goal-driven interventionism by embracing indirect, exploratory approaches. Grounded in the social enterprise Soil Trust in rural Hong Kong, the study examines how reclaiming organic waste and regenerating soil health can catalyze societal change. Meandering design navigates structural constraints through relational logic, temporal fluidity, and intentional ambiguity, fostering emergent collaborations across communities, institutions, and nonhuman actors. Drawing on agential realism and strategic indirection, the authors analyze 80 site engagements and 60 interviews using narrative inquiry and analytical abduction. Findings reveal four dynamics—nimble resistance, relational logic, temporal fluidity, and intentional ambiguity—that reconfigure participatory design as ecological accompaniment over time. The paper contributes a transdisciplinary framework for design-led societal transformation, emphasizing local viability, environmental attunement, and collective reinvention. Meandering offers a heuristic for engaging complexity, enabling designers to respond to eco-social crises with humility, adaptability, and long-horizon commitment.

CCS Concepts

• Networks; • Human-centered computing;

Keywords

Strategic indirection, Agential realism, Intersectoral collaboration, Soil health convergence

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1 Introduction

This paper theorizes and practices meandering toward societal change, an underexplored mode of inquiry in participatory design. Meandering is a slow, stepwise movement that stays with emerging questions and treats obstacles as invitations to delve deeper. It explores existing relations, practices, and oppositions, repurposing them for unintended uses. Instead of rushing to conclusions, meandering loosens rigid positions and grand ambitions. The designer fosters curiosity that moves between fascination, restraint, and detachment [1]. Directionality arises through entangled patterns—flows and boundaries shaping design terrains, echoing Karen Barad’s [2] notion of phenomena co-constituting through “intra-action.” Meandering is relevant in design through its circuitous reconfiguration of societal legacies and milieus behind complex problems.

In design, soil is often seen as inert—just a background or substrate for human activity like construction, agriculture, mining, or speculation. Yet, the fates of soil, climate, and people are linked: depleting one intensifies stress across the others [3] and requires urgent design responses. Viewed through planetary and intergenerational lenses, soil is a dynamic ecosystem shaped over millennia by gravity, water, and climate cycles. Living soils detoxify contaminants, renew water, produce food, and store carbon. These functions hinge on myriad relationships among rocks, sediments, microbes, plants, animals, and human practices [4–6].

Participatory design that reinvests organic waste to rebuild soil health, replenishes carbon pools, thus open liveable futures. Converting local waste into shared resource flows can alleviate food scarcity and climate pressures beyond the immediate site [7]. Designers increasingly explore material ecologies and practice-led infrastructures that reintegrate metabolic flows within bioregional limits [8, 9]. Recovering these capabilities is vital, as governments and market incentives trail ecological realities [10]. Still, research shows inertia, fragmentation, vested interests, and short-termism hinder the social dynamism needed to repair soils and reconnect people to their bioregions [11, 12].

Participatory designers face two key challenges in addressing our eco-societal crisis. First, societal decisions often replicate past

norms and preferences, reinforcing structural conditions that demand long-term change over quick fixes. Second, rebuilding metabolic collaborations and soil ecologies requires implementation-heavy work across decades and generations. This work remains precarious as conventional design tends to be surface-oriented, solutionist, and ill-equipped for protracted issues [13]. To counter reductive methods, we ask how participatory designers can foster redistributive, restructuring change beyond imagination—by meeting radical differences with perseverance and indirect action.

We ground our paper in Soil Trust, a social enterprise in rural Hong Kong that embodies meandering design to mediate past, present, and future. Partnering with a farm, retailer, hotel, welfare center, and food scientists, Soil Trust reclaimed organic waste across sectors to revitalize unused land and latent potential. In Hong Kong, rapid urbanization, outsourced food production, and contested waste policy limit regenerative uses of biodegradables for soil [14]. Since its 2021 launch, Soil Trust has initiated a participatory, emergent, and reconfiguring design inquiry whose ripples continue to unfold.

Meandering took shape as Soil Trust encountered pushbacks and detours that redirected its path: from educational proposal to field survey; eco-social farm pilot to community/industry alliance; and public advocacy to social impact case—without abandoning its insurgent course. Engaging environments, infrastructures, and communities revealed indeterminacies that unlocked new functions. We argue design is boosting local viability and designer sensitivity by uncovering opportunities within resistance and revaluation. In contrast, external investments often bring hidden costs, disrupt integration, and create bioregional disconnects.

2 Participatory design and societal change

Scholarship on collective resource governance stresses designing relations with existing or emerging institutions [15, 16]. It emphasizes biocultural commons—tangible landscapes and infrastructures, and intangible contributions like heritage and customs—entangled in their terrestrial context [17, 18]. Research highlights relational processes and contextual specificity as key to collective identity and personhood in regional development [19–22]. Studies from the Global South show how community self-determination arises from design knowledge tied to struggles for recovering localized ways of living [23, 24]. Some work describes participatory design that intervenes in collaborative infrastructures [25] or addresses harmful production and consumption patterns [26, 27] to build local resilience against external pressures [28, 29]. These framings can unintentionally limit interventions to fixed identities of locality, peripherality and designer [30]. Predetermined notions of utility also fail to explain how societal change often stems from emergent intuition, disengaged actions, and everyday experiences [31]. Rigid intentions leave designers – particularly in the Global North – unprepared for resistance or obstacles. To address this, we explore design-led meandering as a lens for multifactor affordances and strategic emergence amid challenges unsuited to quick, predefined ‘solutions.’

3 The meandering praxis

We propose meandering as a concept for durational participatory design without goal obsession: an open-ended exploration grounded in curiosity that can lead to evolutionary pathways unanticipated by intentional logics. In the natural world, meandering reshapes landscapes as currents in oceans, rivers, glaciers, and magma shift laterally. Rivers and their tributaries are constantly remade assemblages in meandering movements, shaping entire watersheds of entangled water, rock, sand, sediments, animals, and plants [32, 33]. We adopt this mutually nourishing unpredictability as a practical approach for design research, embracing purposive, exploratory movement that challenges creation paradigms fixated on functionality, efficiency, and technology. Meandering design involves category-defying immersion, following detours, reading across disciplines, and convening unexpected partnerships by respecting ambiguity in existing challenges and reweaving them toward unexpected reconfigurations [34].

Anchoring this approach in transdisciplinarity [35], we place Karen Barad’s agential realism [2] in generative dialogue with Robert Chia’s and Robin Holt’s strategic indirection [1]. Barad’s feminist theoretical physics details how people/world relations emerge through entangled, continually reworked intra-actions, positioning the designer as co-constitutive of what unfolds [36]. Chia and Holt implement intra-action through praxis: pragmatic coping actions arising from unspectacular, locally adaptive, timely attuning in immediate situations [37]. For both, difference and otherness are not concerns of tolerance or inclusion but forces for rethinking how designers know, act, and exist in a world that is always already relational. Barad welcomes difference as patterns of generative interference rather than division (“diffraction”) while Chia engages ambiguity, unknowability, and paradox as opportunities for mutual transformation (“the foregrounded other”). Meandering thus becomes a life-embedded, humbling mode of inquiry that honors complexity and unpredictability through concurrent knowledge-making and responsibility grounded in preconditioned locality.

Prior research discusses movement in contingency as a program for repositioning the designer within complexity through decentering [38], nomadizing [39], or drifting [40]. Often, this movement is anchored in developing tooling, visualization, products, technology, or speculations that overlook renewal processes in resource-constrained settings [41]. Meandering speaks directly to these conditions, relying foremost on what is locally available and workable. Structural problems require radically durational, deeply participatory approaches that exceed project timeframes, goal confinement, and shared norms [42]. Our narrative inquiry into Soil Trust explores how social innovation can engage predefined factors over the long haul when ready solutions are unattainable, and how strategic meandering reconfigures people/world relations through collective action.

4 Methods, data, analysis

Between 2021 and 2025, the authors collaborated with an organic farmer and permaculturist to implement the Soil Trust enterprise. We investigated how social networks and collective fermentation practices could locally regenerate soil nutrients from organic waste, while establishing exchange relations that make such practices



Figure 1: Emergence, interventions, and challenges (capitalized text) of enterprise over time and parties.

Table 1: Dynamics in the meandering design praxis

Nimble Resistance	Relational Logic	Temporal Fluidity	Intentional Ambiguity
INTERVENTIONS—RECONTEXTUALIZING			
Reclaim waste imperative	Redirect design paradigms	Ritualizes land care	Community alliances
Endorse versatile land use	Activate sensory engagem.	Savor whole-life cycles	Account for generativity
Uphold manual practices			Polyphonic identity
TECHNOLOGIES—ENTANGLING DIFFERENCE			
Emancipatory sensemaking	Protocols for curiosity	Knowledge continuum	Multi-layered organization
STRATEGIES—INDIRECTING PROPENSITIES			
Refuse dominant reasonings	Privilege relationality	Unfold through ritual	Power of not full legibility
Sidestep confrontation	Mundane intuition	Work unpredictably	Useful vagueness

viable. Our team comprises a bioregioning designer, an anthropologist, a media expert, and a community artist. Responding to Hong Kong’s 3,000 tons of food waste landfilled daily, low recycling rates (in absence of a waste-charging scheme), and marginalized agriculture, we experimented with collective soil care formats that engage younger and diverse populations. Loss of nutrient cycling

traditions, fragmented governance, speculative land banking, lax zoning, and urbanization-driven planning have depleted landscapes and prospects across the territories’ countryside [43].

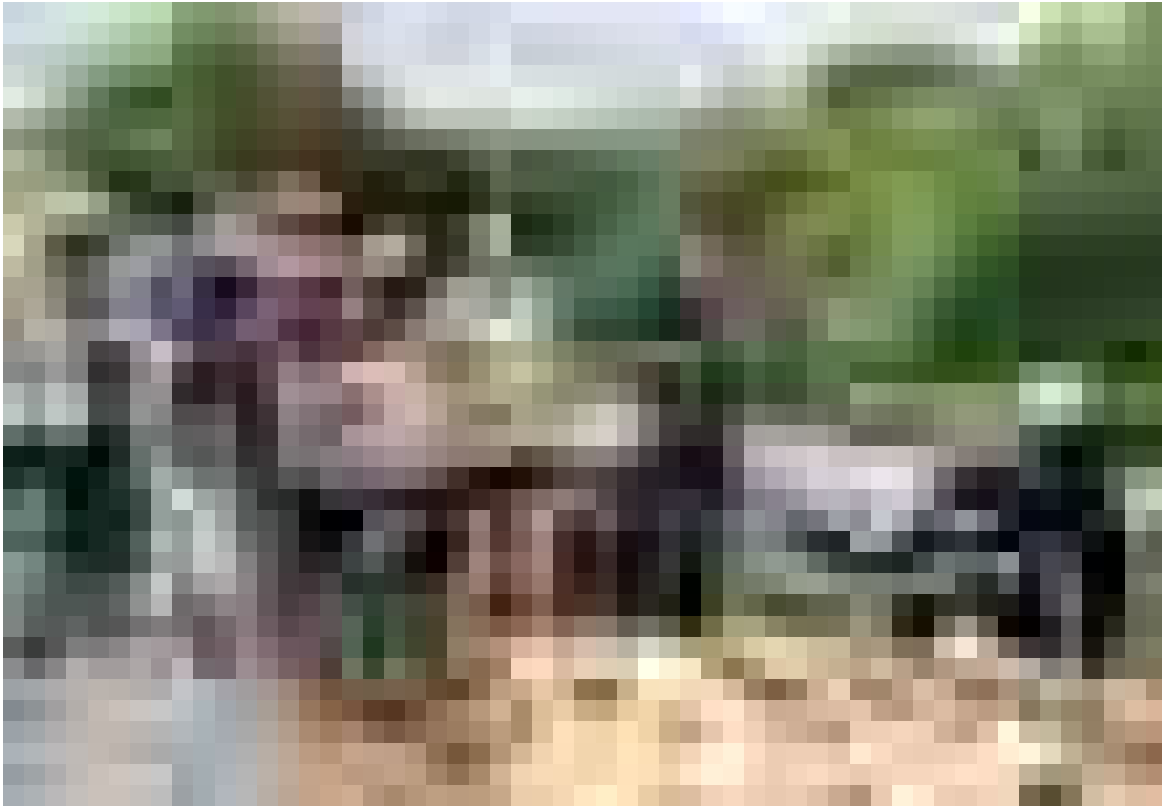


Figure 2: Immigrant women advising farm manager on planting potatoes without soil disturbance.

4.1 Nimble Resistance

Rather than exerting frontal attacks against dominant systems, Soil Trust engaged challenges by repurposing what already existed and noticing underutilized capacities. As Author 2 puts it: “We were not fixated on predefined plans but recognized those inherent, not yet realized potentials from emergent, weak signals.” Nimble resistance reclaimed waste, endorsing multifunctional land use, and upheld manual practices as shown in Figure 2.

Reclaiming waste as imperative resisted linear consumption and dependence on costly infrastructures (landfills). “We simply upcycled waste with waste,” Author 1 remarks, capturing the idea of using one discarded material to mobilize another without external inputs: fruit peels as microbial starters, rice bran as catalyst, recycled plastic containers as collection bins, and cardboard as mulch. Combining such materials facilitated nutrient cycling while counteracting unregulated waste streams.

Endorsing versatile land use involved adopting an unused plot within a production farm for research, agriculture, education, and convivial activities. Author 3 captures this tension: “We borrowed and reactivated this land, it was a gift, and then we had to give it back—we lost the gift to conventional progress.” As part of slow diplomacy, we regularly showcase Soil Trust at ‘zero waste’ or ‘carbon neutrality’ events of urban developers to keep farmland regeneration (and speculation) on the radar.

Upholding manual practices prioritized decentral, human-propelled methods over costly, high-tech approaches. We revived folk wisdom by brewing enzymes from fruit peels and pickling scraps that preserve nutrients and curb smells. Applying these ferments in land care has stimulated soil microbiology and beyond, as Author 4 notes: “The limitations imposed by labor-intensive communal methods carry no longer the negativity of inefficiency but keep us in tune with the reality of living on a shared planet.” Limitation thus became a precondition for humility and collaborative creativity, therefore suspending narratives of convenience and automation.

Nimble resistance was underpinned by emancipatory sensemaking that embraced contrasts. Participants used mapping, waste diaries, social media, drone footage, and academic diagramming to share encounters with bubbling bacteria, fungal infestations, unidentified plants, and developers dumping rubble. Instead of smoothing differences, digital tools honored the clashes across kitchens, natural and public life. As Author 2 observes: “Here joy is how we relate, engage, and commit to joint purpose and obstacles, not just about feeling good.” This mediation emphasized diversity as a strength and collective agency amid constraints.



Figure 3: Soil health service journey to foreground backstage of care at households involved.

4.2 Nimble Resistance

For Soil Trust, nutrient cycling meant addressing intergenerational relations, compensating (nonhuman) work, coordinating consumption and production, and reconsidering what counts as ‘alive’ and worthy of care. Our reasoning favored contextual sensemaking over isolated facts or linear causality. Author 1 emphasizes: “Since we cannot precede our relations, our existence and meaning are conditioned on inhabiting the connections across people, institutions, cultures, and the natural world.” Outcomes were configured by local specificity rather than universality. We responded by redirecting design paradigms and activating in situ sensory engagement.

Redirecting design paradigms, questions mapping, and design thinking conventions that abstract users and value. Author 2 asks: “How might we destabilize conventional consumer-driven thinking by challenging our visual language and factoring human nature mutuality, for example, into the service blueprint?” This reorientation pushed us to reconcile human needs with soil dispositions, subverting ecologically indifferent valuations and shifting to ecosystem-centric frames as rendered in Figure 3 [48, 49].

In situ sensory engagement involved eco-social codes of conduct: distributed bacteria culturing, shared farm responsibilities, studio reflections, or blind tasting of harvested crops. Author 3 notes: “People are meeting, moving, touching, smelling, sensing, conversing with human and nonhuman others.” Multisensory interactions with soil and peers co-produced knowledge that intensified

and multiplied across social domains, producing embodied intuition rather than abstracted metrics.

Digital technologies amplified relational logic by sparking curiosity. Social media brought volunteers together through awe, change, and complexity. As Author 2 explains: “We’ve been analyzing the exchanges on the instant messaging groups, how members talked about insects or incidents at the farm and in kitchens. People were moved by each other.” Digital connectivity transported curiosity through the playful or the urgent, thereby motivating volunteers to become attuned or take action.

4.3 Temporal Fluidity

Soil Trust insisted on the afterlife of materials, interventions, learning, and configurations to counter design cultures enamored with novelty and instant gratification. Time, here, is open-ended, layered, responsive, with latent futures emerging across rhythms of practice. Author 2 reflects: “Our process is a strategy constantly informed by encounters—the impact is not apparent unless its entirety is lived through, which has to be accounted for from the very beginning.” We enacted temporal fluidity by ritualizing land care, savoring whole life cycles, and redistributing communal legacy.

Ritualizing land care created rhythms across distance: households reproduced microbial starters quarterly; hotel kitchens pickled scraps monthly; farm volunteers convened weekly. Author 1



Figure 4: Pitch deck for corporate funders advocating collective fermentation to recover hospitality food waste.

observes: “Despite social and geographic distances, we stayed connected metabolically and recurrently with the farm plot and each other.” Evermore the plot is unfit for agriculture, we revisit our partner farmer and the dumping site, staying with their unfolding fate.

Savoring whole life cycles meant tracing birth, growth, succession, decay, and renewal in fermentation bins, compost stacks, and crops. Author 4 shares: “We witnessed many plants going all the way to seed; you see its beginning and you see its end, it’s complete.” And discoveries followed. Celery is edible beyond stems with seeds steeped into tea, leaves ground into pesto, roots stewed into soup. Compost’s off-grid heat can be harnessed for passive cooking, turning microbial activity into a utility.

Distributing communal legacy describes how different groups continue carrying Soil Trust’s message beyond its active phase. Author 4 explains: “Fond memories spread through networked sharing from one point to another.” The eco-social farm welcomed villagers, hoteliers, students, and the underprivileged. Despite sweat and toil, it offered respite from daily hustle, attracting family relatives, passersby, and nonhuman visitors. These entanglements constitute collective impact that now outlives the physical project, traveling through intertwined relationships, practices, and stories.

Digital platforms supported temporal fluidity via knowledge continua. Internally, instant messaging, online workspaces, and repositories aided task management, agrowaste inventory, crop planning, and citizen science across time and space. Externally,

social media channels, pitch decks (Figure 4), publications, and forums attributed contributions to partners and audiences, keeping knowledge relevant within and beyond the organization.

4.4 Intentional Ambiguity

Throughout, Soil Trust remained ambivalent about framing, justification, and communication—not by accident but as a prudent design choice. Ambiguity enabled adaptation to changing conditions. Author 1 recalls: “Our initial intention was to convene various groups to a fermentation-led training program for upcycling biowastes. Then, unforeseeable, not to be missed opportunities carried us off track.” Collaboration became a matter of bridging experiences and translating learning, not a goal-driven instrument. We pursued proliferating community alliances, accounting for generativity, and realizing polyphonic identities.

Proliferating alliances meant opening hybrid spaces that straddled academia/practice, commons/commerce, interior/exterior. Villagers, ecologists, entrepreneurs, and consumers joined a collective enterprise with ambiguous ownership that puzzled even our farm manager: “Isn’t it confusing to run Soil Trust with four parallel initiatives under different names: Growers Without Borders, Soil-Feeders, Belongs to the Field, and The Farm Studio?” Precisely such investment in diversity created fertile ground for dialogue across differences and functional expansion. Structural open-endedness



Figure 5: Soil service menu for hoteliers, upskilling program for immigrants, community action for families.

shifted agency from individual assumptions to collective reinterpretations, transforming waste into resources and competition into collaborations.

Accounting for generativity required sidestepping conventional impact metrics in favor of capability-based evaluation. Author 2 asks: “How could we measure the quality of interactions among people and nonpeople in the whole process of learning? Any standard assessment would be reductive of the process and context.” Generativity emerges through access to diversity and shared responsibility that shape capabilities, mindsets, and common potential. Soil health, likewise, manifests relationally—some crops prefer sandy soils, others loamy—manifesting value situationally rather than absolute.

Realizing polyphonic identity stemmed from manual farm work with low barriers to entry, which equalized status, blurred roles, and flattened hierarchies across all involved. Author 4 observes: “The farm is not just a backdrop: depending on the person who enters, it takes on different significance. Design students turned it into a studio, TV directors into a scenery, night owls into a campground, dancers into a stage, visitors into a destination.” Immigrant women shared agricultural knowhow from their home countries, thereby transcending distinctions between nonlocal and local, observer and protagonist. It displaced assumptions about identity and belonging.

Intentional ambiguity was supported digitally through multi-layered organizational attribution. Soil Trust communicated via

dedicated websites and social channels, while SoilFeeders engaged hospitality professionals, The Farm Studio convened design students, and Growers Without Borders mobilized volunteers from diverse walks of life. This array kept identities plural and adaptable, helping us resist capture by any single narrative or institutional category (Figure 5).

Collectively, the meandering praxis worked against the grain of dominant systems, addressed seemingly intractable structural challenges, and persevered past the enterprise’s active phase. Continuous coping responses within constraints led to personal and organizational reinvention, expanding functions based in communities that enact locality.

5 Discussion

Meandering as praxis in design involves shifting socio-material structures, which Barad calls “diffractions” [2], by persisting, moving indirectly, unlearning, and welcoming emergence to invigorate latent opportunities locally. It repositions participatory design from intervention in time to accompaniment over time [50]. For practitioners, it reframes mundane otherness as the source of nimble, circuitous pathways toward wider futures. In Soil Trust, meandering between localized exploration and enabling constraints reconfigured the practice, practitioner, and praxis—altering identities, relations, and capacities alongside.

The concept raises four questions for participatory design: (i) How to become authorized to design with the social? (ii) How to remain transparent about positionality, standards, and limitations? (iii) How to be participatory in difference and mundane? and (iv) How to hybridize design praxis?

Authorization with the social. Our work centers on societal implementation, extending participatory design beyond ideating paradigms, problems, or plans. This shift reconfigures designers as capability builders—locally, collectively, and durationally [13]. Though rooted in locality, meandering affirms that historical socio-technical patterns need not shape future paths. Engaging the unknown, overlooked, or stagnant [51], prediction becomes irrelevant. Meandering designers pursue overarching propositions (e.g., design for soil health) through small, iterative, or oblique actions, creating focus, momentum, and longevity across domains [8, 52]. Disciplinary silos alone fall short when only synergy can address structural issues [53, 54].

Transparency about positionality and limits. We became accountable not only for our interventions but also for prior relations and decisions. Understanding these legacies helps reveal functional fixations. Waste, for example, is poorly recognized, limiting reimagined uses. As in-migrating conveners, we stayed alert to our status and responsibilities: declaring limits, justifying choices, and clarifying ethics. Meandering supports the idea of “design as equipment for social learning” [50]. Impact here is not a score to chase but a web of reciprocal connections and vibrancy, measured through realization potentials in people, communities, and society [55].

Participatory in difference and the mundane. Our study focused on embedded practices and coping tactics that shape organizational life and agency beyond formal roles or top-down directives. External actors played a role, but the collective embeddedness of locals and nonlocals strengthened Soil Trust’s resilience. Both invited and uninvited groups sparked encounters, activities, and potentials, enabling exploratory journeys [56]. Participation emerged through the skilled, situated use of old and new technologies within social routines. Endurance relied on continually renewing members and partners, embracing unlikely allies, and sustaining trust.

Hybridizing praxis. Soil Trust straddled indoors/outdoors, profit/nonprofit, education/practice. This hybridity prompted shared rethinking beyond personal views. Meandering between waste/reuse, production/consumption, and contestation/coordination required sustained investment across sectors, building redundancies that enable functional expansion. Contrarily, functional specialization poses risks during fluctuations; therefore, expert design clashes with evolutionary concepts like meandering [57]. As crosscurrents strengthen and interest in geomorphology increases, so does understanding participatory design as circuitous reinvention, transdisciplinary heterogeneity, and movement reservoirs.

Meandering offers heuristic relevance for design because it embodies multiplanar worldmaking movements as indirect strategy that extends post-structuralist debates on interventionist design from within [58].

6 Conclusion

What does meandering offer to participatory design? Conceptually, when using meandering, we refer to ourselves as be(coming) part and parcel of a heterogeneous concurrent, an immanent unfolding amongst constituents. It differs from lingering (in time) [38], wandering (in place) [39], or drifting (in flow) [40] that do not reframe the idea of the agent that is acted upon and separate the designer from what is being designed – as external reality – thus still retain the vestiges of a subject/object divide. Methodologically, meandering refers to ever-evolving, bio-geographically situated conversations between multiple genealogies arriving at the present that, in unison, are performing future-casting processes [59]. It changes how we make sense of futures. We can no longer ‘ground’ the future in thinking that forecasts a desired trajectory. Neither can we ‘unground’ the future in pure speculations. Instead, a meandering designer engages in other-asserting transformation that not only attends to how matter matters but also who matters in matter, and why it matters for futures. Hence, meanderable designers work with materials, life forms, organizations, data, fictions, and narratives in an accompanying, counterfactual, and defamiliarizing manner by practicing the embrace and balance of complexity, equivocation, corroboration, and conjecture [60].

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Visiting De Pastorie

A reflective and speculative exploration of more-than-human storytelling in participatory design research

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Abstract

The Participatory Design (PD) research project De Pastorie focuses on the transition from a rectory to a living lab for participatory circular design, exploring how communities can reimagine their environment during the transition of the large-scale Noord-Zuid Limburg (NZL) infrastructural project in Flanders, Belgium. During this road transition, the planned demolition of buildings and gardens raised urgent questions among actors involved: How can communities and their environments coexist in the face of fragmentation? This exploratory paper explores how *De Pastorie* contributed to dialogue and reconciliation in an environment and community disrupted by the development of project NZL by narrating the practices of human and more-than-human co-creation through the perspective of De Pastorie as a more-than-human narrator. Inspired by Arendt & Beiner's [2] notion of 'visiting' and Haraway's [6] call for 'staying with the trouble', the paper explores how more-than-human storytelling as a methodological approach within PD can serve as a reflective and speculative tool to narrate processes of co-creation and co-existence in socio-environmental transitions.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design; Human computer interaction (HCI); HCI theory, concepts and models; • **Applied computing** → Arts and humanities.

Keywords

Participatory Design, more-than-human, visiting

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1 Introduction

Large-scale infrastructural projects reshape landscapes, often impacting communities' social and cultural fabric. An example is the ongoing Noord-Zuid Limburg (NZL) road transition, a complex project initiated by the Flemish Government [16] aimed at improving road safety, mobility, and biodiversity in the high-traffic road infrastructure connecting the Belgian city of Hasselt with the Dutch city of Eindhoven. For four decades, the trajectory has been a topic of active debate in spatial planning and design. The road cuts through municipalities, impacting the livability of neighbourhoods and road safety while fragmenting *De Wijers*, a nature area composed of rivers, valleys, and ponds [14, 15]. These disruptions cause ecological damage and social discontent, revealing multiple layers of conflict between mobility and livability, infrastructure and ecology, government vision and community memory, affecting humans and more-than-humans (e.g., trees, soils, ponds). There is a pressing need to explore Participatory Design (PD) approaches that actively contribute to dialogue and reconciliation across human and more-than-human communities, by investigating the entanglements [5] between "human and more-than-human worlds" [12:138] and how they approach "societal and climate issues" [12:138].

The Flemish government [16], through its independent body De Werkvennootschap, initiated the design process for a new road design to address the current negative environmental and social impacts of the road. Studio NZL - a consortium of engineering and design firms, legal support, and research groups, among which UHasselt's Civic & Policy Design - was set up by De Werkvennootschap for the research and design processes of the new road trajectory. The Flemish government expropriated plots and buildings as part of the road redesign process, leaving behind empty houses and gardens. This planned demolition raised urgent questions among the consortium's designers and researchers, but also local inhabitants and collectives: How can communities and their environments coexist in the face of fragmentation? What if the 'lost'



Figure 1: De Pastorie, a former rectory in Houthalen-Helchteren, Belgium. Photograph by UHasselt.

materials, spaces, landscapes, and memories could be reassembled to nurture new forms of coexistence?

We investigate these questions through the case study of De Pastorie, a former rectory in the municipality of Houthalen-Helchteren (Figure 1). De Pastorie became the subject of a PD research project that explores how circular design can support communities in reimagining their environment during large-scale, often contested, infrastructural transitions. De Pastorie, embedded in NZL, has been transformed over the past five years into a living lab for participatory circular design in collaboration with the local community, Studio NZL, UHasselt researchers, De Werkvennootschap, the Flemish government’s environment department, the municipality of Houthalen-Helchteren, and several architectural practices. Through their co-creation in workshops, design experiments and festivities, materials (e.g., bricks) and natural elements (e.g., plants) scheduled for demolition were harvested and reused to shape new, community-driven public spaces and landscapes in and around De Pastorie. These materials and natural elements, retrieved from the expropriated buildings and gardens of project NZL, assumed new roles while retaining traces of their histories, absences, and possibilities; they became active participants in processes of making [8]. De Pastorie is an experiment in reconciliation through co-creation, demonstrating how PD can support communities in coping with the changes of large-scale socio-environmental transitions by re-assembling materials and fragmented social and ecological ties. To explore how human and more-than-human communities and their environments can coexist amid those transitions, we adopt more-than-human storytelling as a reflective and speculative method within PD.

2 Method: Visiting & staying with the trouble

In this paper, we explore storytelling as a method to enable researchers to attend to the affective, material, and relational dimensions often overlooked in conventional documentation [10]. We draw inspiration from Arendt & Beiner’s [2] notion of “visiting”, an imaginative ethical practice that explores how to “make others

present” [2:43] and Haraway’s [6] call for ‘staying with the trouble’, a commitment to remain within complexity in the face of environmental uncertainty. We explore both concepts to tell the story of De Pastorie from the perspective of the building itself.

We first explore how the De Pastorie nurtured coexistence and co-creation between humans and more-than-humans (e.g., materials, plants) during the socio-environmental transitions of project NZL using more-than-human storytelling. Second, we experiment and speculate through more-than-human storytelling to explore how narrating the story of De Pastorie - through a more-than-human narrator (De Pastorie) - can be a tool for enlarging engagement with multiple (human and more-than-human) perspectives in PD project documentation embedded in socio-environmental transitions.

To address both objectives, we gathered and analysed materials (e.g. visual, textual) from workshops, site visits, Live Projects, prototypes, etc., that were organised in and around De Pastorie over the past five years. We used these materials to curate a “silent” exhibition of De Pastorie for a Flemish design competition, starting from the story of the perspective of De Pastorie - a narrative we further developed through this paper - and curated materials (e.g., pictures, maps), inviting ‘visitors’ of the exhibition into the story of De Pastorie through the building’s perspective.

3 Exploring more-than-human ways of storytelling

Inspired by Latour et al. [9], and Dreessen et al. [3], De Pastorie can be understood as a “socio-material assembly - a collection of people and objects, dealing with a matter of concern” [3:33] and as the ‘thing’ [9] at the centre of this PD project that gathers people and materials around shared concerns. The idea of PD projects being defined by socio-material assemblies of humans, more-than-humans, their entangled relationships, the matters they gather around, the things these gatherings produce, etc., implies that projects like De Pastorie are more complex and layered than the sole perspective of a human initiator or “maker” [3:36]. The story is thus more complicated than our (authors’) sole perspective. Therefore, we considered the perspective of De Pastorie itself to tell the story, as it is at the centre of the project and the human and more-than-human entanglements it comprises, attuned to the agencies and care relations of these more-than-human actors [11, 13]. Meanwhile, where do we situate our perspectives as authors of this paper and as humans involved in the project, since “it matters which stories tell stories as a practice of caring and thinking” [6:37]?

3.1 Visiting perspectives

In “hot compost piles” of “unexpected collaborations and combinations” [6:4], like the project of De Pastorie, how do we include, or at least, take into consideration, the standpoints of diverse actors (humans and more-than-humans) involved? According to Arendt & Beiner [2:43], “critical thinking is possible only where the standpoints of all others are open to inspection”. This critical thinking involves more than empathy; it is a practice that “makes the others present” [2:43] through imagination - an act described as training the mind to “go visiting” [2:43]. Visiting offers a way to engage ethically and reflectively with viewpoints that may differ from our own, especially those which are more-than-human.

The act of visiting is one that we further explored in this paper. What does it mean for us, human authors, to visit, with our imagination, the perspective of De Pastorie during its past and ongoing process of becoming a living lab for circular design? For humans involved in the project, visiting became a practice of dialogue. We asked actors, such as the architectural firms, neighbours and students, to share the ‘material’ (e.g., plans, pictures, drawings, manifestos, mock-ups) representing their engagement with De Pastorie. For more-than-humans (e.g., bricks, plants, tiles), visiting became an exploratory practice. Since we cannot ‘ask’ a harvested tile, a woodworm or De Pastorie itself to share insights, visiting more-than-human perspectives with our imagination became characterised by uncertainty. Indeed, how do we address our human perspectives and the uncertainty accompanying our thinking in more-than-human perspectives, even considering that “uncertainty” is an integral and necessary part of participatory projects [3:51]?

3.2 Writing with uncertainty: critical thinking, language and ecopoetics

For Arendt & Beiner [2:43]: “the trick of critical thinking does not consist in an enormously enlarged empathy through which one can know what actually goes on in the mind of all others. To think, according to Kant’s understanding of enlightenment, means *Selbstdenken*, to think for oneself” [2:43]. Thus, thinking through our perspective is part of critical thinking and, therefore, part of visiting.

Research projects like De Pastorie, which enable more-than-human and human co-creation, are emerging practices in contemporary PD. Smith et al. [12:193] argue that “contemporary PD research and practice must pay even more attention to relational practices, methods, tools, languages and focus their efforts to work across scales, cultural domains, human and more-than-human worlds”. This agenda of relationality in PD “implies rethinking which languages designers need to learn, utilise and be fluent in when they build relations and practice” [12:193]. How we tell our stories of PD research projects also implies rethinking the language we use in our storytelling and how this can address the relational features humans and more-than-humans share.

To articulate these relations and languages, we drew inspiration from ecopoetics, which embraces “both poetry and critical practice” [4:2]. Ecopoetics explores more-than-human perspectives by approaching “language not as a feature that distinguishes humans from other species, but as kin to a vast array of nonhuman communications” [4:2]. We can explore our storytelling as “a capacity of the literary arts to break through the boundaries of genre . . . forging an ecology of language, thought, perhaps eventually leading to action, even species-wide transformation” [4:4].

We will explore more-than-human storytelling as a reflective and speculative practice in PD by using our human perspectives, critical thinking, and language while visiting, with our imagination, the perspective of De Pastorie throughout the project’s process.

4 The story of de pastorie

Through seven concise chapters, we share De Pastorie’s process of becoming a living lab for participatory circular design by narrating the story from our imagination’s visit to the building’s perspective.

4.1 History

My story begins with project Noord-Zuid Limburg (NZL) - an ambitious infrastructural plan to reshape mobility, reconnect natural areas, and redesign public spaces in my region. For years, the road connecting the cities of Hasselt and Eindhoven has cut through my municipality, negatively impacting road safety, traffic flow, and quality of life. But before the boom of transregional traffic, rushing loud and fast, there was another connection here - a local one I was part of.

I stood among neighbouring houses and slow roads. In summer, my garden consisted of bees, aged trees, and dense shrubs. I received visits from the community for births, weddings, and funerals. But as time passed - and traffic became frequent and faster - my slow roads were severed, and the visits grew fewer.

Project NZL promised change for the better. Yet, homes would be demolished, soils would be expropriated, and trees would have to be uprooted. I, too, was uncertain of my future assembly. The pastors who once lived here, those who cycled by, the housemaid who dusted my interior, had long gone. To understand me, one would need to ‘visit’ [2] me and imagine what I have experienced.

4.2 Setting the agenda

My roof sagged, and my garden had grown wild and dense, no longer tended by human hands. My presence had grown softer. Yet one day, a group of people stopped before my gates.

They called themselves the *Friends of De Pastorie*. They visited me. Perhaps sparked by memories or inspired by opportunity, they would light lanterns, walk my paths at night and cast films against my walls. They curated my rooms with artworks for an exhibition, inviting humans in. These collective gestures proved to the municipality, which was intending to sell me to the private market, that I could be part of their future.

Efforts of the *Friends* soon caught UHasselt’s attention, where design researchers and students explored PD to redesign my surroundings with materials planned for demolition. Through their shared actions, co-creation had sparked and together with Studio NZL, UHasselt was invited to co-design a new identity with me. It was not a straightforward process; tensions rose as some saw me as an obstacle to be overcome, while others saw me as a memory worth preserving. Budgets for my transformation were uncertain. Yet, my transition from a rectory to a living lab began within this uncertainty.

4.3 Mapping & harvesting the environment

These new UHasselt and Studio NZL actors engaged with my physical presence and intangible heritage. They walked through my rooms with sketchbooks, reading my material palimpsest, and exploring my textures.

Their work soon expanded beyond my walls. During UHasselt Live Projects (Figure 2), students designed in, with, and around me for two intense weeks. Students and neighbours revived the paths of my garden, turning my empty corners into gathering places. For the first time in years, humans walked on my wooden floors, touching my handrails and doorknobs. These new synergies, which I was at the centre of, motivated the municipality to send out a design competition to restore and extend me as a community hub.



Figure 2: A drawing of the connections between De Pastorie and the surrounding buildings during a Live Project in 2022. Image by UHasselt.

Beyond my garden, project NZL was ongoing, calling for expropriation and demolition of homes, trees, and gardens. These homes contained bricks, tiles, and thresholds like mine, yet were quickly emptied of human life, despite being in good condition. These buildings were not ruins, but places filled with the materials, memories and emotions of those who occupied them, prompting the design researchers and post-graduate students who engaged with me to ask, ‘What can we do with the remaining materials?’

UHasselt gained access to a few expropriated buildings, from which they salvaged a variety of reusable materials. Sharing these materials with the municipality and community shifted my transformation from solely renovation to reuse. Making urban harvesting central to my future was a rigorous process, testing patience and endurance in administrative systems. Multiple emails were sent to the head office in Brussels to acquire permission and keys for these homes.

The people who engaged with my transition also had to work with the act of visiting [2], entering other people’s homes, imagining their presence and histories, accepting that this would not save these homes, yet choosing to stay with the trouble [6, 13]. The neighbours felt a mix of relief that a decision about the neighbourhood had been made, grief for what was lost, and uncertainty about what the future entailed. Because touching abandoned homes was considered overly sensitive, harvesting mainly occurred in a commercial building.

4.4 Co-designing the house

Inside my rooms and garden, UHasselt students and postdocs tested brick mock-ups, measured my wooden beams, and compared the tones of reused plaster against new mortar. There were many mishaps as mock-ups crumbled or ideas clashed. Sometimes, materials showed resistance. My tiles did not always come out easily for replacement, despite the students’ efforts to remove them. Projects involving such complexity and multiple voices require patience, compromise, and empathy [2, 7]. It was never about perfection; it was about learning through the process of co-creating with me. My



Figure 3: The co-created pizza oven in the garden of De Pastorie. Photograph by Olmo Peeters

transition was messy, uncertain, and risky. I became a workshop - a laboratory.

Within this chaos, the humans involved experienced a shift from designing *for* me to *with* me, responding to the uniqueness of my materials. Decisions were made through collective argument and thoughtful consideration.

Some days, frustration echoed louder than enthusiasm. Drawings were redone, emails unanswered, and permits delayed. Yet people stayed and worked through the mess together [6]. They became collectively emotionally intertwined with my rebuilding process. Initially, it did not make sense to the governmental parties involved. Urban harvesting was complex and time-consuming, yet people continued (re)building, working together through obstacles. Reuse became a hands-on way to connect with me and entangled others (such as bricks and plaster). This process birthed a sense of collective pride, an affective attachment formed through shared struggle and labour [1].

Eventually, people reopened my doors: as a living lab. My walls and gardens became testing grounds for experimenting with materials and circular designs. Through the work of students, design researchers, people from my neighbourhood, and my *Friends*, my co-created living rooms were inviting people.

4.5 Co-designing the garden

The following conversation was with my garden. The team of architectural practices discussed with the local community what they wished for in my garden: a pavilion for gatherings and a pizza oven (Figure 3) for sharing meals - places that could nourish collective moments with my garden. This seemingly simple wish took weeks to realise; funding was stretched, and deliveries were delayed. The design meetings were long and tense: Whose idea should take precedence?

Architectural plans for the pavilion and the pizza oven were carefully considered, with materials selected for their sustainability (Figure 4), locality, and heritage value, using what was present instead of sourcing new materials. The work was exhausting. Some

days, rain halted everything. Some volunteers stopped coming. But others stayed. Staying with me [6] was never easy.



Figure 4: Co-creating the pizza oven in the garden of De Pastorie. Photograph by Lilla Starkbauer.

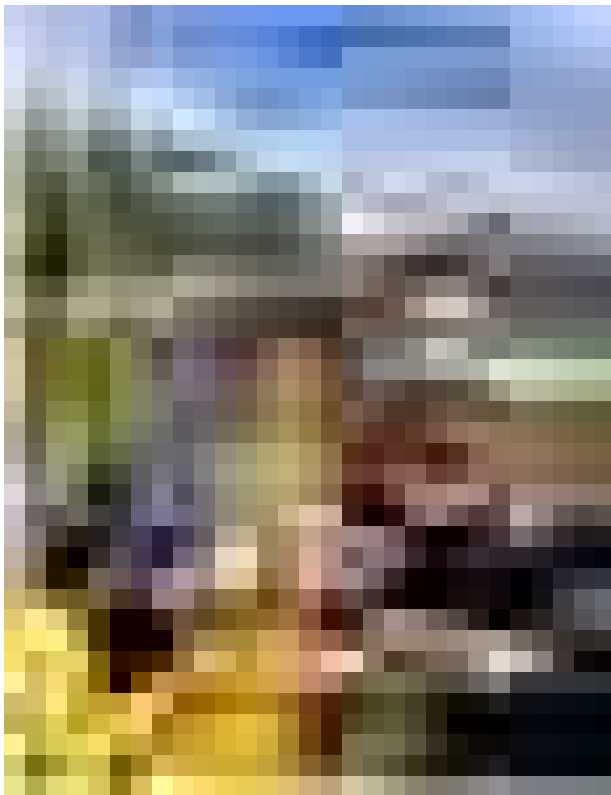


Figure 5: Participants of project De Pastorie sharing a meal in de garden of De Pastorie. Photograph by John Silvertand

4.6 Celebrating every step

After long days of drilling, digging, and puzzling materials into new places, all those present would gather in the shade of the pavilion, or next to the still-warm pizza oven (Figure 5). Often, invitations were sent out through social media, and posters invited people to organised festivities. In those moments, divisions between collectives dissolved, and they shared the same unfinished story.

As the festivities faded, the architects faced a new challenge: continuing the work with the harvested materials. Some materials did not fit the new plans, and others required extra labour or testing to meet safety standards. How could they align circular ideals with the realities of design schedules, budgets, and regulations? My trouble did not end; it simply took a new shape.

4.7 Passing the building on

Houses hold memories, but I've learned I can also hold uncertainty, frustration, and hope. I am still under transformation - being studied, restructured, and given attention. My transition inspired a new building for exploring participatory circular design, where the work of urban harvesting continues. Yet, the transfer is difficult as contractors struggle to adapt to circular methods; it is not the most efficient or profitable way to build.

Perhaps this is what it means to visit [2] and to stay with the trouble [6]: to keep returning, to imagine from another's place, as there are still many to visit (such as the woodworms in my wooden beams), and to remain within the unfinished. My story is not a celebration of success but one of collectively working through challenges.

5 Visiting a new living lab

As described in our visit to De Pastorie, this PD research project continues in a new building along the NZL road trajectory. The transition to this new building is an ongoing process of negotiations, presentations, and meetings, as well as setting the agenda for the upcoming year together with De Werkvennootschap, Studio NZL, and the involved collectives. A small selection of projects and participatory activities (e.g., workshop harvesting plants) is currently taking shape. Yet, the uncertain building process is still ahead, intertwined with the complexity of the larger project (NZL).

6 Reflections & Conclusions

We explored the act of visiting, with our imagination, the perspective of De Pastorie to research (1) how De Pastorie nurtured coexistence and co-creation between humans and more-than-humans in the socio-environmental transitions of project NZL using more-than-human storytelling, and (2) how this storytelling can be a tool to enlarge engagement with multiple (human and more-than-human) perspectives in PD project documentation.

Regarding the first question, we learned that narrating the entangled human and more-than-human perspectives in De Pastorie is an entangled act in itself: we assembled fragments of data (e.g., field notes, prototypes, anecdotes) into a story, aiming to narrate the human and more-than-human co-creation of the project while navigating between our reflections and the others we gathered and imagined. This process demanded responsibility: considering how our words might represent or mishear other voices. In this sense,

critical thinking was about thinking for ourselves while keeping the standpoints of others imaginatively present [2]. This dual movement - thinking independently yet in relation - underpinned the writing process.

Regarding the second question, the method of more-than-human storytelling revealed opportunities and limitations. Its strengths lie in surfacing the relational dimensions between humans and more-than-humans (e.g., bricks, tiles, plants) that conventional documentation risks overlooking [10]. Yet it is also characterised by uncertainty [10], as it challenged academic writing conventions. Opening the story to diverse perspectives - without romanticising it and situating it within the expectations of scientific rigour - contained friction, questions, and disagreement among us authors. The narrative of De Pastorie does not claim to speak for the building nor pose as an authentic more-than-human voice. Through the speculative practice of visiting [2], we foreground limits, assumptions, and political implications of more-than-human storytelling. One might wonder if the building shares the same agenda as portrayed in the story. Perhaps the building does not need to be rebuilt if we look at it from the perspective of an inhabiting woodworm.

Circular participatory design was not an unquestioned practice, since it sometimes conflicted with efficiency, regulation, and the material constraints of the building itself. The building can act as a guide in giving voice to various human and more-than-human perspectives and agendas. Our exploration of more-than-human storytelling is, therefore, about opening the conversation on the more-than-human perspectives a PD project might encompass, exploring how we can use our human language to address those perspectives. We acknowledge that, also in this experiment, more-than-human storytelling risks becoming naive when it lacks the capabilities to account for conflict and complexity, assuming a direct alignment between human intention and the interests of more-than-humans. Yet, it is perhaps engaging with this struggle that signals a shift currently needed in documenting and reflecting on PD research. As Tsing [13] reminds us, it is in ruins, whether ecological, material, or methodological, that regeneration begins.

De Pastorie's story emerged from disturbance: NZL involved expropriating houses and gardens and displacing entangled memories and emotions, yet new forms of co-creation and coexistence took place. As the process of De Pastorie continued, the division between the teams involved became more fluid. The collaboration between the architectural offices, municipalities, neighbourhood collectives, researchers, and governmental parties intensified during the project. De Pastorie became a story of different perspectives entangled with one another through De Pastorie. This makes documenting a complex matter. By becoming solely spectators or reporters, attempting to avoid biasing results, one could limit the process of narrating the diversity of emotionally intertwined perspectives within projects like De Pastorie (in which we were also participating). Imagining ourselves in the world of 'others' involves adopting ethics, empathy, and humility regarding our human perspective, challenging storytelling in academic writing.

We argue that this method of storytelling offers a promising though challenging avenue for PD research. It enables writing *with* these layered perspectives (rather than only *about*) by re-narrating them. As the story continues in a new living lab, visiting

its perspective with our imagination can allow us to speculate about its future. The story about De Pastorie can inform this speculation.

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Situated Intermediation for Socio-technical Transitions: Understanding the Role and Practices of an ‘Urban Curator’ in Rotterdam

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Abstract

This paper aims to enhance discussions within Participatory Design about the role of intermediary actors in socio-technical transitions, such as the energy transition. These intermediaries play a role in bridging grassroots initiatives with institutional stakeholders, often playing a role in empowering or facilitating community-driven change. By combining the community-focussed and designer-led practices found in PD with strategic, and more institutionalised perspectives operating across multiple governance levels present in transition studies, we argue that we can come to a more expansive understanding of intermediation. This is illustrated by an exploratory case study in Rotterdam, The Netherlands, where we identified three interrelated domains where intermediary actors could benefit from sustained support: community building, institutional engagement, and building credibility and legitimacy.

CCS Concepts

• Design; • Participatory Design; • Empirical studies in interaction design;

Keywords

Intermediation, urban curator, institutional engagement, socio-technical transitions

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1 Introduction

Major socio-technical transitions, like the energy transition, are complex processes of change, requiring large scale infrastructural

investments, technological innovation and radical social and cultural adaptation [57., 60.]. Citizen participation is regularly highlighted as essential to accelerate such transitions. [47., 62.]. In practice, participation remains limited or superficial [31.]. Communities often perceive public participation processes as tokenistic, insufficient and ineffective [63.], while community-led initiatives are often sidelined, instrumentalised, or dismissed altogether [5., 46., 69., 78.]. This creates a persistent disconnect between institutional agendas and citizen-driven initiatives.

To address this gap, researchers have drawn attention to intermediaries, individuals or organisations that connect grassroots initiatives with institutions, support collaboration and align diverging agendas [42., 77.]. In Participatory Design (PD) this has informed a shift from facilitating the design of products and services, towards more complex acts of mediating between communities and institutions, and supporting collaborative decision-making processes [16., 76.].

However promising this direction might be, there is still limited knowledge about how such practices unfold, the roles, capacities, and conditions under which PD practitioners act as intermediaries, and how they contribute to larger societal challenges. Moreover, PD literature often foregrounds community perspectives [15., 21., 45.], and privileges the designer-as-intermediary over other social actors who also perform intermediary work [11.].

Insights from literature on sustainability transitions, where intermediation is an established concept, could broaden our understanding of intermediation in PD. There, intermediaries are widely recognised as essential to bridging institutional and grassroots efforts [42., 77.], supporting knowledge exchange, building coalitions, translating between domains, and coordinating experimentation. Nonetheless, transition studies often conceptualize intermediation at a macro level, focusing on actors operating within regional or national systems, paying less attention to the situated, micro-level practices that are a core concern of PD.

This paper bridges insights from PD and transition studies towards an integrated understanding of intermediation. The guiding research question is: how can we understand intermediaries and their practices, by connecting the situated perspective of PD-work with the more systemic approaches in transition studies? To explore this, we combine a literature review with empirical accounts from a two-year collaboration with a specific intermediary actor: Huis van de Toekomst (House of the Future - HvdT), a community initiative in Rotterdam.

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Using a Research-through-Design approach [23., 71., 72., 82.], with HvdT we co-developed a toolset, called a transition-scape, intended to visualise community dynamics, enable scenario building, and facilitate dialogue between residents and institutional stakeholders. While the tool provided a probe, the focus in this paper is not its design but the discussions and reflections it enabled. These shed light on the role of intermediaries in practise and contribute to a broader understanding of intermediation in PD within societal transitions.

2 Theoretical Framework: From Facilitation to Intermediation

Participatory design (PD) originated as a politically motivated approach aimed at empowering workers to shape the design of workplace technologies, traditionally involving ‘users’ and ‘designers’ co-developing solutions, with both learning from this exchange [61.]. Within this tradition, facilitation has long been central to enabling collaboration [68.], yet as PD expands to engage with communities [6., 15., 38.] and heterogeneous collectives [34., 35.], its limits become evident. Intermediation thus emerges as a broader, context-sensitive, practice: enabling participation, navigating institutional boundaries, managing conflicting interests, and fostering cross-sectoral partnerships [76.]. Intermediation in PD refers to a set of evolving and situated practices that

“...expand the participatory design repertoire to more explicitly embrace the communication, sensemaking, dot-joining, frame-shifting, advocacy, and diplomacy skills and capabilities required to reconcile the interface between the institutional action frame and the participatory design frame” [75.:163].

Intermediation work is relational, political and embedded, demanding technical competence, sensitivity to local cultures, power relations and ontological plurality [33.]. According to [76.:19.] intermediaries work in the *negative space* between communities’ aspirations and institutional or commercial procedures, with the expressed goal to advance the interests of the communities they work with. This aligns with conceptions of design as reflective practice [48., 58.] and of intermediaries as reflective practitioners [65.], able to navigate the messiness of real-world engagements. Key tasks of designers-as-intermediaries include building trust and legitimacy among diverse and sometimes polarised communities [13.], curating participatory spaces and orchestrating collaboration [28.], translating between communities and institutions [16.], and introducing alternative ways of knowing, including emotional, embodied and more-than-human knowledge [34.].

Effective intermediation requires certain enabling conditions. Long-term embeddedness is essential for understanding context-specific dynamics and building relationships [75.], as well as for capacity-building, team formation and defining future roles [28.]. Credibility with both civic and institutional actors is also critical, and can be built through prior trust, collaborative track records or symbolic capital [16.]. Reflexive and strategic capabilities are also needed: the ability to reframe problems, identify entry points for action, and adapting to emergent challenges [70., 79.].

However, available actions are shaped and constrained by the institutional frames at play [12., 50.]. Barriers include institutional

co-optation of participation to legitimize pre-existing agendas [16.]; PD being reduced to a managerial tool [29.]; and ontological and cultural mismatches, when stakeholders hold incompatible world-views and ideals [33.]. Misalignments between design and policy framings can lead to misunderstanding or marginalisation of participatory insights [4.]. Furthermore, intermediary roles can be emotionally demanding, with practitioners caught between competing demands and expectations [49., 76.], while lack of recognition or formal mandate might make intermediary work structurally precarious [76.].

2.1 Intermediaries through the lens of transition studies

In transition studies, intermediaries are widely recognised as essential actors in facilitating transformative change across sectors, systems, and governance levels. Positioned between niche innovations and mainstream regimes, transition intermediaries are

“... actors and platforms that positively influence sustainability transition processes by linking actors and activities, and their related skills and resources, or by connecting transition visions and demands of networks of actors with existing regimes in order to create momentum for socio-technical system change, to create new collaborations within and across niche technologies, ideas and markets, and to disrupt dominant unsustainable socio-technical configurations” [43.:1072].

Multiple typologies have been proposed to classify intermediaries. [42.] distinguishes between systemic intermediaries, who work towards structural institutional and systemic change, process intermediaries, who enable the implementation of new practices, and niche intermediaries, who protect and nurture early-stage innovations. Earlier work by [77.] highlights the intermediaries’ role in translation, alignment, and trust-building across actors. [26.] and [66.] emphasize positioning within a socio-technical regime: some intermediaries, like local governments or state-funded organisations, act from within, while others act from outside or at the margins, such as grassroots or civil society organisations.

Despite their diversity, transition intermediaries share certain characteristics: they operate in relational spaces between actors, often across multiple governance levels [52., 77.] and advocate, initiate or manage new policy or market processes [42.], mobilise resources [42., 59.], enable cooperation [26., 52.], and influence the development and uptake of new technologies [56., 59.]. Specifically for the energy transition, intermediaries are considered pivotal in bridging state, market and civil society to address the challenges of decentralised implementation [52.].

Intermediation depends on contextual factors: access to and distribution of resources [26.], institutional openness to new actors and practices [20.] and the perceived legitimacy of the intermediary [51.]. Institutions may instrumentalise intermediaries for narrow, pre-defined goals [66.], and the innovative potential of community action has been consistently neglected [67.], with grassroots initiatives facing both intrinsic challenges of organisation, management and resourcefulness, and diffusion challenges that hinder their

potential to create change, for example because of their context-specificity, competition by powerful mainstream alternatives, and policymakers' hesitance to deal with small scale, often informal organisations [26., 67.].

2.2 Towards an integrated understanding of intermediation

Both PD and transition studies foreground the importance of intermediaries in shaping inclusive and adaptive futures, approaching intermediation as a boundary-spanning practice that enables situated exploration and cross-sectoral collaboration [36., 38., 45.]. In both traditions, intermediaries are understood as relational actors embedded in their contexts, facilitating mutual learning, managing tensions and fostering collective agency. PD speaks of *infras structuring* [40.], the shaping of social, material and institutional arrangements that sustain participation, while transition studies uses similar language around reflexive governance and network building [25., 41., 42.]. Both fields stress long-term engagement and iterative processes to build trust, legitimacy and capacity [32., 70.] and understand intermediation as translation work between institutional and grassroots perspectives [75.], ontologies [34.], niches and regime structures [66.] and across sectors [77.].

While in PD intermediation is being foregrounded as key to navigating increasingly complex social contexts, its engagement with systemic change agendas and large socio-technical transitions remains limited. Transition studies recognise intermediation as a socially embedded and constrained process that can be performed by diverse actors, and provide a more scalable perspective on linking local practices with broader systemic regimes. Drawing from transition studies can strengthen PD's definition and positioning of intermediation.

2.2.1 From designer-centric to recognising multiple intermediary actors. A dominant view in PD conceives intermediation as a role increasingly assumed by participatory designers, reflecting a broader shift from facilitation to social engagement [16., 76.]. However, this risks centring designers as default intermediaries and overlooking other actors, such as community organisers, artists or activists, who also mediate situated processes of change [11.]. Transition studies offer more differentiated typologies of intermediaries, distinguishing between systemic, niche and process intermediaries [44.], positioned inside regimes, on their margins, or in opposition to them [26., 66.]. This pluralist framing helps PD move beyond the assumption that intermediation is a role naturally fulfilled by designers. It encourages researchers to explore how designers might work with or alongside existing intermediaries, such as citizen-organisers, activists, or local advocacy groups, opening up space for alternative and more complex collaborations.

2.2.2 From skillset towards a socially and institutionally entangled practice. Intermediation in PD is often conceptualised as a method or skillset [75.], understating its existence *in the wild* [3., 74.]. As shown by [50.] and [39.], participatory processes often unfold within *designerly spaces* that support generative co-creative models by temporarily suspending institutional or other constraints. Consequently, these spaces frequently clash with bureaucratic procedures or institutional logics during implementation. Transition

studies conceptualise intermediation as a socially and institutionally embedded practice, foregrounding the relational entanglements and structural constraints intermediaries face when operating *in the wild* [3., 74.], where they must continuously negotiate institutional norms, political agendas, interpersonal dynamics, community relations and the practicalities of everyday life. Acknowledging intermediation as inherently situated and vulnerable to institutional inertia, co-optation, and epistemic dissonance, helps PD researchers to reframe it as a relational practice, rather than a tool- or skill set.

2.2.3 From small-scale, project-based and localised participation towards systemic change across scales. As PD increasingly engages with complex societal challenges, it needs to articulate how it interfaces with policymaking and (urban) governance. Scholars such as [6.], [4.] and [9.] warn that participatory innovations risk losing legitimacy and effectiveness when they are disconnected from broader policy frameworks. Where PD often focuses on local practices and immediate stakeholder engagement within dedicated designerly settings [39.], transition studies foreground the role of intermediaries in enabling cross-level alignments, connecting niche innovations to regime-level actors, partly also because of the long-term embeddedness of intermediation within existing governance and institutional structures. PD should develop methods to engage with existing institutional structures, without being co-opted or instrumentalised.

2.3 The case for Urban Curators

In this paper we explore an integrated perspective of intermediation illustrated by a type of intermediary actor already operating at the crossroads of PD and transition studies. Such actors appear under various names, including community orchestrators [2.], citymakers [14.], network weavers [80.], brokers [54.], cultural brokers [18.], and boundary spanners [54., 81.]. Within this spectrum, the urban curator [64.] stands out as a particularly relevant type of intermediary because of their cultural orientation and their embeddedness in social and spatial contexts. Urban curators are citizen-professionals [7.], often with a background in design, architecture, the arts, or social work, who take on roles of organizing, mobilizing, and mediating in local transition processes. They are no longer 'just' designers, architects or artists but also storytellers, community organizers, fundraisers, project developers [14.]. Their work often emerges from local needs and a desire to contribute to in what they perceive as societal benefit [37.]. They identify opportunities for change, foster collaborations, and use creative methods to support dialogue between communities and institutions. While they share PD's collaborative and inclusive ethos, urban curators are typically not institutionally affiliated. Embedded in specific neighbourhoods, they maintain long-term relationships and adapt to shifting dynamics. This positioning enables them to sustain engagement beyond the lifespan of specific interventions, to maintain continuity across initiatives, institutions and other civic actors, and to respond to evolving local challenges. However, independence also brings structural precarity and reliance on temporary funding.

Our case study engages with an urban curator: Huis van de Toekomst, a community initiative in Rotterdam. Over two years of collaboration, we explored how Hvdt responds to the three conceptual limitations outlined above: by enacting intermediation

beyond design, operating in the wild, and attempting to engage governance systems. The resulting empirical insights inform a situated, practice-oriented model of intermediation.

3 Researching Huis van de Toekomst through Design

Huis van de Toekomst, setup in 2019, is an artist-initiated energy community, located in Rotterdam's Bospolder-Tussendijken (BoTu) neighbourhood. BoTu is a diverse and economically disadvantaged neighbourhood, with a young, predominantly non-western migrant population [24.], and among the first five neighbourhoods set to transition from gas to district heating by 2030. While the city frames the energy transition as potential leverage for community building, education, work, and combating poverty [24.], residents often lack the capacity, resources, and communication channels to participate meaningfully [55.].

Against this backdrop, HvdT positions itself as an urban curator uncovering local skills, providing a collaborative platform for residents to experiment with sustainable practices and advocating for their needs. In partnership with housing corporation Havensteder, energy company Eneco, and the city government, HvdT is granted the use and management of the internal courtyard of a housing block and its empty ground-floor apartments for 18 months. These spaces are made available to local initiatives for hands-on experiments in sustainable, human-powered living, such as community theatre, collective cooking with fire, gardening, cheese making, wool weaving and other traditional crafts that re-imagine energy as a social, not just a technical, challenge.

3.1 Methodology

This research project adopted a Research-through-Design approach [23., 71., 72., 82.]: together with HvdT, we co-developed a toolset intended to aid HvdT in their work as urban curator. In a series of three workshops with internal (residents, local initiative leaders) and external stakeholders (municipality of Rotterdam, housing corporation Havensteder and energy provider Eneco) we developed a 'transition-scape': an interactive digital visualisation that maps and simulates flows of resources such as money, time, community engagement and personal skills within the network of community initiatives. Internally, the visualization helped community members identify resources, assess collective impact and test scenarios, surfacing less tangible aspects of community work, like motivation, belonging, care and shared responsibility. Externally, it served as a communication and negotiation tool with institutional partners, making visible the social and organisational value generated by the community, that often remains hidden from formal decision-making processes. After the design workshops, the prototype was demonstrated in three public testing sessions approaching different audiences: residents and local initiative leaders; an extended group of experts from the fields of design, spatial planning, interaction design, energy transition; and lastly, a small group of institutional stakeholders.

Our focus in this paper is on the discussions and insights emerging around the development of the tool that touch upon the role of urban curators as intermediaries. To come to these insights, we took notes during the design workshops and testing sessions, gathered

feedback from participants and held semi-structured interviews with the core team of HvdT, initiative leaders, and institutional representatives, as well as eight in-depth interviews, with individuals managing initiatives at HvdT. The data was analysed using a thematic analysis approach [8., 53.] to illuminate intermediation practices, community dynamics, and institutional engagement, guided by a reflexive research attitude that acknowledges the positionality of the researchers [19., 58.].

4 Rethinking intermediation through the case of HvdT

While not always trained as designers, urban curators share PD's commitment to collaborative, exploratory and inclusive processes of change, distinguished by sustained engagement within social ecosystems, and partial or complete independence from institutional frameworks. Their legitimacy derives from local knowledge and relations. This embeddedness allows them to identify emerging needs, connect diverse actors, and foster trust across organisational and cultural divides. Drawing on our co-design trajectory with HvdT, we identified six recurring 'intermediation practices':

1. Coalition Forming

Coalition building is a continuous and situated practice, rooted in personal relationships and informal networks. The core team of HvdT actively engages with: 1. the local community which gives relevance to the whole undertaking; 2. cultural funders and researchers, who provide legitimacy and funding for their activities; and 3. local institutions, who provide campaign funding for social work. Such relationships remain fragile, requiring to continuously navigate power asymmetries and to cultivate the social infrastructure that sustains long-term collaboration.

2. Agenda Setting

HvdT frames the energy transition as a transformation embedded in social relations, collective practices, and community well-being. HvdT's narrative emphasizes cooperation, shared responsibility and local agency, and foregrounds concerns that are often overlooked in energy policy, such as the importance of neighbourly care, cultural traditions and collective rituals and rhythms of life.

3. Mutual Learning

Learning occurs through storytelling and informal hands-on exchanges, around shared meals, gardening sessions or repair tasks, which surface forgotten knowledge and skills that can be reactivated for the future. The idea of 'energy' encompasses emotional, social and cultural aspects, shared responsibility and resilience.

4. Providing Agency

HvdT fosters self-organisation, by providing physical space, facilitating shared decision-making, and establishing frameworks for continuity and long-term engagement. However, achieving and safeguarding good governance requires time and continuous effort, which is undermined by the temporary status of the available spaces, and the unpredictability of institutional support.

5. Testing Futures

Through low-threshold, practical experiments, such as collective cooking, HvdT allows participants to rehearse relationships [25.] around cooperation, governance and resource-management.

6. Providing space for reflection and debate

HvdT enables, what [30.] term agonistic space, a context where disagreement becomes a productive condition for surfacing tensions, negotiating values and strengthening collective agency.

4.1 Intermediation beyond the designer

HvdT occupies a role that mirrors the expectations placed on participatory designers-as-intermediaries: facilitating collective sense-making, fostering trust, bridging divergent opinions, and supporting long-term collaboration. Yet, as a community-based urban curator, HvdT actively collaborates with external designers, researchers and other actors, challenging an assumption in PD that intermediation is primarily a new responsibility for designers [76.] and aligning with voices recognising that intermediary roles can be fulfilled by various social actors [11.]. Rather than subsuming intermediation within the designer's role, PD should learn from and support existing intermediaries, rethinking designers as co-learners and allies, with new methodological and ethical responsibilities: designers must consider when and how they enter and exit community contexts and how their presence intersects with ongoing local work and existing dynamics.

4.2 Intermediation in the wild

HvdT works in an entangled, ongoing setting. By maintaining a continuous space for collaboration, HvdT engages in infrastructuring [40.], the long-term shaping of social and material arrangements that support collective action, and institutioning, situated actions that reshape or create institutional norms, relationships, and structures through participatory processes [33.]. The shared use of empty apartments and the communal garden offer spatial and organisational anchors for community initiatives. This embeddedness allows HvdT to respond to evolving needs and navigate institutional constraints, offering a grounded counterpoint to more ephemeral PD interventions. HvdT illustrates a continuous and socially entangled practice, responding to recent calls for more longitudinal, embedded and systemic approaches [10., 34., 70.].

4.3 Intermediation within governance and policy frameworks

Barriers to effective intermediation identified in the literature are evident in the case of HvdT: lack of formal mandate or legal form which limits access to funding and long-term partnerships [5.] combined with the absence of policy frameworks that recognise and support such work [16.]; institutional inertia and siloed governance which inhibit uptake of community insights [22., 27.]; fragility of coalitions that depend heavily on interpersonal trust rather than structural support [1.], and the emotional and logistical burden placed on intermediaries without formal institutional mandates [49.]. HvdT's challenges in maintaining institutional engagement, despite individual goodwill, reflect systemic limitations that frequently constrain participatory efforts, such as institutional risk-aversion, limited mandates, or the instrumentalization of design for predefined agendas [16., 17.].

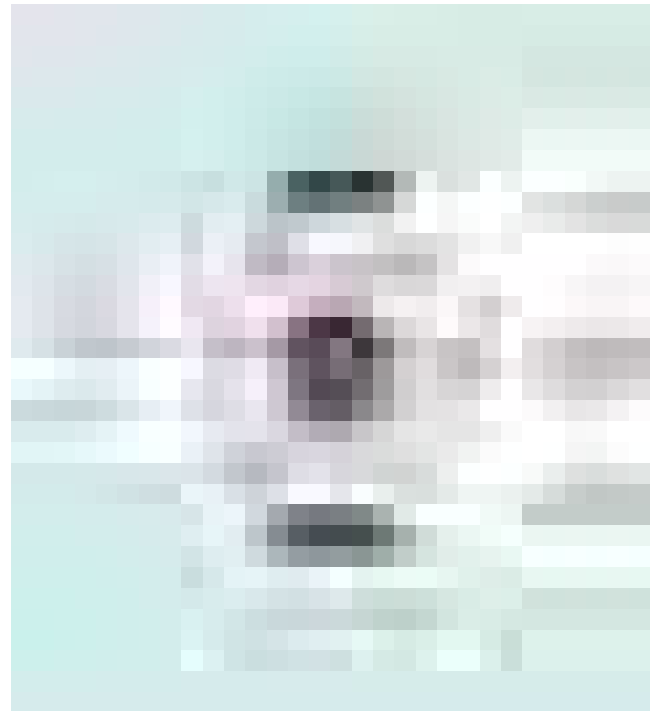


Figure 1: Schematic model for situated intermediation, illustrating how urban curators mediate between civil society and institutions, using a range of intermediation practices.

5 Discussion & Conclusion: Towards a model of situated intermediation

This study is limited to a single, in-depth, yet context-specific case, shaped by the embedded, collaborative research design and the interpretive role of the researchers. Findings should thus be understood as exploratory rather than generalizable, though they point to tensions that may resonate across other cases. Future work may build on these empirical insights to examine under which conditions intermediary work is effective, and how tools like transition-scapes, perform in supporting intermediation processes.

To facilitate further discussion, we synthesize the insights of this study in a schematic model of situated intermediation (Figure 1). The model illustrates the layered context in which urban curators operate, between institutions and civil society, within the broader, complex, and multi-scalar process of the energy transition. It highlights three areas that consistently demanded attention in HvdT's practice: community building, institutional engagement, and striving for legitimacy and credibility.

1. Community building

Urban curators sustain the social infrastructures that contribute to community building. Providing opportunities to test and refine communal practices in low threshold experiments allows residents to explore different configurations of collective life, surfacing values and tensions. Such open-ended, iterative processes foster ownership, adaptability, mutual recognition, and both individual and

collective agency. This aligns with PD's emphasis on infrastructuring [40.], co-creating social and organisational arrangements that sustain collaboration over time.

2. Institutional engagement

Despite broad acknowledgement that effective communication is essential for securing long-term commitment, in practice it remains a significant challenge. Communities lack the tools to engage with institutions on an equal basis, while institutions remain reluctant to meaningfully engage with citizen-led processes that fall outside conventional planning cycles. Transition-scapes can function as boundary objects [73.] translating community practices into institutional narratives, making them actionable, and facilitating institutioning, the shaping of new institutional relations and structures through everyday practices [33.]. Future research should explore how intermediation tools can empower communities and equip policymakers with the skills to meaningfully collaborate with citizen-led initiatives.

3. Organisational capacity

To move beyond experimental status, urban curators require organisational consolidation and legitimacy. The research process supported HvdT in reflecting on its own role as an urban curator and strengthening its position vis-à-vis both the community and its institutional partners. This mirrors findings in PD research on the capacity of applied research to provide legitimacy to the work of community organisations [28.]. However, achieving legitimacy remains precarious and depends on demonstrating value to both communities and institutions [51.]. Future research should examine how design contributes towards organisational development and legitimacy of intermediaries operating outside formal institutional structures, and the long-term impact such intermediary practices may have on governance structures.

The model presented here invites PD researchers to reflect on the relevance of the urban curators for the discipline and to critically consider the positionality of PD practitioners as potential allies and collaborators of situated intermediaries. Context-sensitive tools, such as transition-scapes, may support community building, organisational consolidation, and institutional engagement, but need to be further articulated and tested across cases.

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Transition Design in Times of Climate Crisis

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Abstract

This paper critically explores the Transition Design (TD) Framework as an approach for addressing the systemic vulnerabilities exposed by the 2024 floods in Rio Grande do Sul, Brazil. Given that TD focuses on transforming systemic challenges by connecting short-term interventions with long-term visions of sustainable futures, this study mobilizes insights from multidisciplinary experts to inquire into its practical application in a context of chronic socio-environmental crisis. The analysis investigates intersections between TD with Participatory Design, arguing that this synergy is essential for effectively translating systemic theories of change into resilient transition pathways that are grounded in local, co-created knowledge. The core contribution lies in advancing the theoretical knowledge of both fields by demonstrating how TD can foster plural and collaborative approaches toward systemic transformations.

CCS Concepts

• Human-centered computing; • Interaction design; • Interaction design process and methods; • Participatory design;

Keywords

Transition Design, Climate Crisis, Participatory Design

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1 Introduction

In May 2024, the southern Brazilian state of Rio Grande do Sul experienced the most severe flood in its history [1]. Weeks of unprecedented rainfall led to the overflow of major rivers and dams to overflow, submerging 478 out of 497 municipalities (figure 01) Entire neighborhoods remained underwater for weeks, over 2.4 million people were affected, 183 lives were lost, and over 50,000 residents were left homeless. Critical infrastructure such as transportation, energy, and water supply systems collapsed, while schools, hospitals, and the international airport in Porto Alegre were rendered inoperative for months [1].

Far from being an isolated tragedy, this disaster is part of a broader pattern of climate extremes that are expected to intensify in southern Brazil. Climate projections indicate that extreme floods in the region may become up to five times more frequent during this century, with maximum river flows increasing by around 20% [3].

Such a context calls for new ways of thinking and acting through design. Beyond technical or emergency-oriented responses, design becomes a means of mediating sustainable and collective transitions, helping societies face present crises while envisioning sustainable futures.

This paper argues that such an endeavor is best facilitated by the strategic convergence of Transition Design (TD) and Participatory Design (PD). TD provides the necessary framework for mapping systemic and complex challenges onto radically large spatio-temporal contexts and developing approaches that target systemic, multi-level transformation. Simultaneously, PD provides the essential methodology for grounding alternative visions, ensuring that the co-creation of sustainable future scenarios is plural, inclusive, and rooted in the invaluable local knowledge of the affected communities, thus connecting long-term strategic direction with actionable, on-the-ground engagement. This orientation reflects a shift in PD over the past decade toward public issues, social innovation, and democratic processes, where social needs and social relations are addressed together [2].

Transition Design (TD), proposed by Terry Irwin [4] at Carnegie Mellon University, was introduced as a field of practice, study, and research dedicated to designing for societal transitions; while also co-creative, it differs from PD by focusing specifically on guiding long-term transitions within complex socio-ecological and political systems. It advances a projectual perspective that connects short-term interventions with long-term visions of sustainable futures, positioning design as both a catalyst and a mediator of systemic change. Transition Design aims to evolve as an integrated discipline that draws on diverse bodies of knowledge and skills to facilitate, accelerate, and guide transitions, supporting continuous processes of transformation across social, ecological, and political systems.

This paper uses the 2024 floods in Rio Grande do Sul as a crucial entry point to critically explore and stretch the Transition Design (TD) Framework [6]. We employ TD not as a prescriptive methodology, but as a robust body of knowledge that must be experimented and enhanced when confronted with urgent socio-environmental crises. By mobilizing insights gleaned from multidisciplinary expert interviews from and beyond the affected region and situating them within the TD framework, this study explores how Transition Design may be enriched by the realities of disaster response and long-term recovery. The core contribution lies in advancing theoretical knowledge in both Transition Design and Participatory



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Figure 1: 2024 floods in Rio Grande do Sul. Photography by ©REUTERS/AMANDA PEROBELLI, via Agência Brasil (<https://agenciabrasil.ebc.com.br/en/geral/noticia/2024-05/nearly-80-rio-grande-do-sul-municipalities-affected-rains>)

Design, specifically by 2 understanding how the TD theory can foster participatory approaches towards long-term and sustainable and collective visions, effectively transforming destabilizing events into pathways for systemic, resilient, and solidaristic transitions.

2 METHODOLOGY

This study adopts an exploratory approach, aimed at investigating the applicability of the Transition Design Framework to socio-environmental crises such as the 2024 floods in Rio Grande do Sul. To this end, the empirical material consists of eight in-depth interviews, each lasting up to one hour, conducted with nationally recognized professionals from diverse disciplines directly related to the crisis (in May, 2024), according to Table 01. A semi-structured interview guide was designed to navigate the four areas of knowledge of the Transition Design Framework (visions, theories of change, mindset and posture, and new ways of designing), figure 2, ensuring that participants' perspectives could be systematically aligned with the conceptual structure proposed by Irwin [6].

The analysis sought to identify key insights and contributions within each of the four areas. Particular attention was given to the ways in which the participants articulated systemic relations, framed long-term challenges, or highlighted cultural and institutional barriers, thus revealing both the opportunities and the limitations that emerge when TD and PD are mobilized in the context of a complex and recurring disaster.

3 DISCUSSION

In this chapter, we present an analysis of the main insights emerging from the interviews, structured according to the four interdependent areas of knowledge of the Transition Design Framework. This structure provides a lens through which the multidisciplinary contributions of the interviewees can be interpreted in dialogue with Irwin's propositions.

3.1 Visions for Transition

Visions for transition are described by Terry Irwin as the co-created, long-term visions of sustainable futures [5] that can guide the development of transition pathways from the present to a desired horizon, a perspective that aligns with PD's commitment to collective sense-making around matters of shared concern [2]. These visions take as their inspirational basis societies that live in harmony with the ecosystems in which they are situated. In Irwin's formulation, such visions are not incremental improvements but powerful images of desirable futures that act as motivators, mobilizing people into action and informing projects in the present, which then serve as steps along the pathway toward those futures.

The 2024 floods in Rio Grande do Sul can be understood as a systemic and complex challenge, characterized by high social interdependence, conflicting agendas among multiple stakeholders, and cascading consequences that unfold across scales and timeframes in unpredictable ways. Such crises cannot be addressed through isolated interventions or disciplinary silos, since their underlying causes extend far beyond the immediate event.

Irwin [5] describes mapping the problem as the initial effort to surface the multiple relationships, interdependencies, and interconnections that constitute complex challenges. In this study, the interviews functioned as a participatory mapping exercise, figure 3, in which participants articulated how the 2024 flood unfolded and what conditions enabled it. Taking the flood as a shared reference point, interviewees reflected on its effects and associated causes, which were progressively translated into a causal diagram. This diagram organized the interview material by tracing cause–effect relations and highlighting systemic fragilities, situating the floods not only as the result of extreme rainfall but as the convergence of vulnerabilities in governance, planning, and socio-environmental justice.

A key contribution of TD lies in attempting to enable the distinction between observable consequences and root causes of systemic problems [5]. As Irwin [4] notes, many issues encountered in everyday life are symptoms of deeper dynamics, and responses

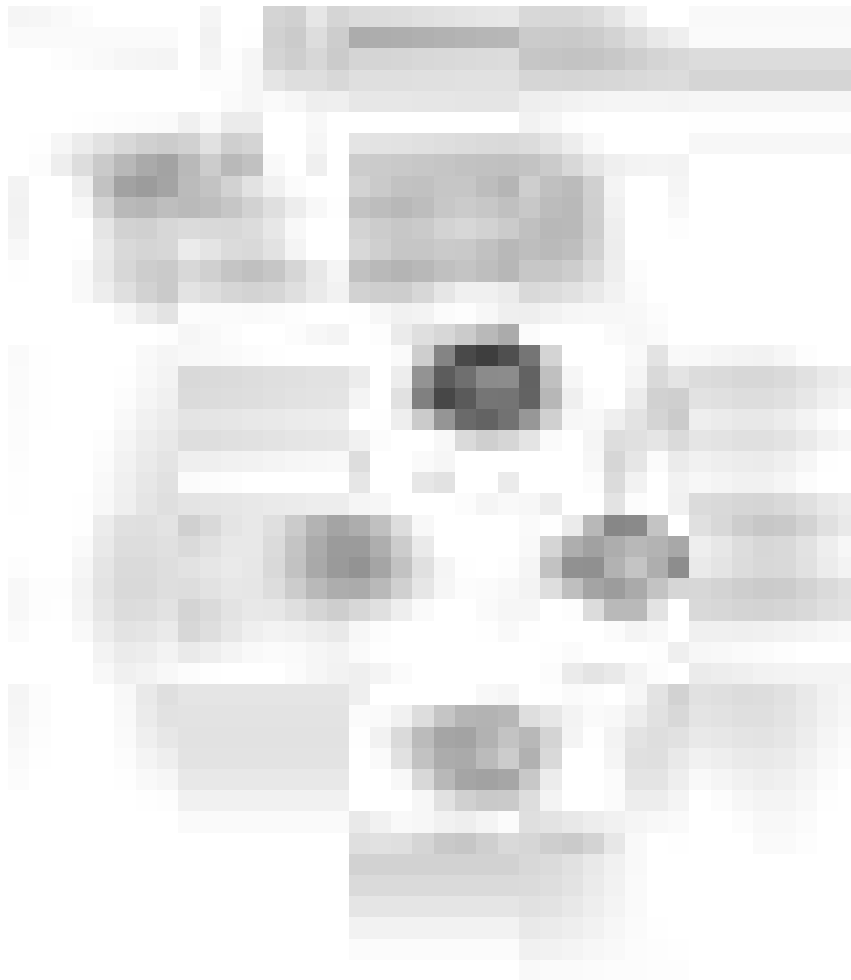


Figure 2: Transition Design Framework from Irwin, Tonkinwise & Kossoff [5]

that overlook these dynamics risk becoming pseudo-solutions. In this sense, an important role of the methodology is precisely to investigate which correlated issues emerge from a crisis, allowing us to trace connections across social, ecological, and institutional systems, a critical step that is practically realized through the localized and situated engagement inherent to PD, ensuring that the definition of the roots problems is co-created with the affected communities.

The research moved toward exploring how participants envisioned possible futures beyond the immediate emergency. Although the interviews did not involve a formal design exercise of projection, characteristic of the intersection between TD and PD, participants were invited to imagine horizons beyond the crisis, in which social, ecological, and political systems might be reconfigured to sustain new ways of living.

For communities affected, the recurrence of disaster defines the horizon of imagination. A participant says: *“In 2013 we had a flood that rose to one and a half meters. In 2024 we had one that reached six meters. And, who knows, in 2028 it may rise to ten.”* Rather than envisioning the eradication of the crisis, the future was reframed

as a capacity to endure its recurrence, a desirable horizon in which cities continuously adapt to the unpredictable and the extreme.

Another participant reinforced this orientation by noting: *“The concept of a resilient city is to welcome the unexpected. That is, to receive an unforeseen event and respond to it with speed, without despair, and by learning from it.”* Such visions are not anchored in distant temporal targets, such as 2030, but in practices that, as she stressed, must begin in the present. In this sense, resilience was not understood as a fixed state, but as a continuous process of adaptation - a transition that is already underway.

Several visions did not appear as speculative imaginaries, but as recognitions of undervalued artifacts, technologies, and ecological systems that already exist. As one participant noted: *“National parks, green areas, floodplains... they did not collapse; they fulfilled their role of filling up and then draining”.* In this light, the most transformative visions of the future are not those that imagine what does not yet exist, but those that recover and revalue what has been neglected. Paradoxically, innovation may reside in restoring the ecological functions that modern urbanization has disrupted. An

Table 1: interview’s participants

Area	Participant	Professional Profile	Focus
Water Resources & Sanitation	I1	Ecologist and environmental engineer, with expertise in public health and institutional water governance	Water management, sanitation infrastructure, environmental health, and institutional frameworks
	I2	Environmental engineer and PhD researcher in hydrology and water resources	River basin management, hydrological modeling, and flood risk planning
	I3	Professor of sanitation and water resources, with international postdoctoral experience	Nature-based solutions, sustainable sanitation, and circular economy approaches
Urban Planning & Architecture	I4	Architect and urban planner, researcher and educator with experience in strategic urban and regional planning	Urban resilience, participatory planning, and landscape strategies
	I5	Senior civil engineer, consultant in urban drainage and stormwater management	Flood control infrastructure, large-scale drainage systems, and public policy advising
Climate Science & Climate Change	I6	Policy advisor in national and international climate adaptation programs	Climate adaptation strategies, governance of multi-stakeholder processes, and institutional capacity building
	I7	Senior climate scientist at a national disaster monitoring and research center	Extreme weather events, climate modeling, and disaster risk reduction
Design	I8	Service designer/strategic design.	Research, social innovation, and facilitation of collaborative processes.



Figure 3: Problem Mapping Exercise Draft. By the authors.

approach that aligns with TD's call for regenerative, place-based futures in which adaptation and transformation are inseparable.

3.2 Theories of Change

The TD Framework [6] positions Theories of Change as a crucial element for understanding and directing systemic transformation. They form a fundamental component of the transition process and serve as a basis for decision-making, as such theories must operate at every level of society, from individuals and communities to institutions and policy structures.

Within the scope of what design can influence, Theories of Change need not only to anticipate crises, but to build adaptive and preventive capacities within communities, enabling them to coexist with natural dynamics while minimizing harm, as one participant says: *"Floods are natural. What we can prevent are the damages caused by extraordinary events"*.

To prevent such damages, responses must combine both structural and non-structural measures. As one participant explained, *"There are non-structural measures, such as land-use planning and zoning: where should human activities take place? There are also structural measures, such as levees and pumping systems, which must operate reliably"*. This distinction underscores that effective prevention depends not only on physical infrastructure and technology, but also on maintenance, accountability, and governance mechanisms that ensure systems function. Therefore, effective transition processes depend on the ability to maintain interdependent systems and coordinate institutions across time.

The floods exposed how Porto Alegre did not consider actions from a systemic point of view. As a participant says: *"The logic of the projects that were designed was in 'boxes'... we had a box for the governmental level, a box for sectors, a box for the State, municipality, civil society, and private sector"*.

After the floods, a discourse emerged around the "reconstruction of the state". The question was raised: from whose point of view, and according to which values, would such a reconstruction be conceived? As one participant noted, projecting needs on behalf of residents without truly engaging them risks reproducing the very logic of top-down expertise that undermined resilience. Also, participants questioned dominant notions of innovation, as one emphasized: *"Innovation does not necessarily mean the use of advanced or cutting-edge technology. We need to recover traditional or Indigenous communities' worldview"* as reflected in traditional practices in Brazil, including Guarani seasonal mobility and riparian preservation, and Kaingang landscape stewardship oriented toward wetland resilience and soil–water cycles. Such perspectives point to the need to rethink the epistemological foundations of design and planning.

In this context, Transition Designers must adopt a transdisciplinary perspective, drawing on diverse fields such as biology, engineering, urban planning, sociology, and also cosmovisions from traditional and community perspectives, to effectively ideate the steps within a transition pathway and create resilient, adaptable solutions, noticing that social structures and ecosystems do not occur in predictable or linear ways.

3.3 Posture & Mindset

Irwin [4] argues that living in and through transitional times calls for self-reflection and a new way of being in the world. This change must be based upon a new mindset or worldview (internal) and posture (external) that shape how individuals interact with others and approach problem solving and design. These dimensions are mutually influencing and co-evolving: worldviews inform postures, which in turn inform practices.

One of the postures emphasized by Irwin [4] is that of **humility, reverence for nature, and acknowledgement of human ignorance**, since complex natural and social systems can never be fully understood or controlled. Multiple interviewees pointed toward the necessity of designing from the ecosystem outward. Their reflections highlighted the implementation of nature-based solutions capable not only of preventing future disasters, but also of regenerating degraded territories. One participant reinforced this by evoking cosmovisions in which *"everything is integrated, everything is connected"*, underscoring the need to recover ways of living that sustain ecological balance.

Humility also appears as a question of the designer's role emerged with particular force. Irwin [4] points to a posture of **openness to both lead and be led, along with an awareness of when one has stepped out of one's domain of expertise**. In our material, this was expanded into what a participant called "bridge-building": the active role of connecting disparate worlds: communities and institutions, local knowledge and expert discourses. As the participant described: *"I am not the person living in the neighborhood, but the one who connects and knows how to talk to both publics."* This suggests that designers have the responsibility to articulate conversations, bring marginalized perspectives into dialogue with institutional power, and invite all actors to imagine futures together - through processes that make sense to those involved, aligning with their contexts, rhythms, and ways of living.

Irwin [4] also stresses the **commitment to the development of radically alternative socio-economic- political structures and paradigms**. This was echoed in the interviews not only as a recognition that incremental solutions are insufficient, but as a call for designers to adopt a posture of provocation, stimulating alternatives to dominant civilizational models.

In line with PD traditions, Irwin [4] emphasizes a posture of **willingness and desire to collaborate and foster positive interactions among groups**, together with the **ability to collaborate effectively in transdisciplinary groups**. These postures align strongly with the interviewees' insistence that crisis management must be multi-agent *"I need the public sector, the private sector, academia and researchers, and organized civil society to manifest themselves. This multi-agent arrangement is fundamental for the contemporary city."* Similarly, another noted: *"It is not realistic to expect a single entity to solve this problem. Popular participation is essential."*

The postures and mindsets highlighted here, while central to Transition Design, do not constitute an exhaustive list, but represent those dimensions that emerged as most critically relevant to the narratives and needs collected in the expert interviews and will be also expressed in the new ways of designing.

3.4 New Ways of Designing

According to Irwin [4], the transition toward a sustainable society will require new modes of working, organizing, and collaborating. Transition Designers understand themselves as agents of change who learn to work with systemic challenges rather than solving them outright, treating each intervention as a step within an evolving transition pathway.

Designing through distributed coordination: During and after the 2024 floods, new ways of designing emerged through digital infrastructures of coordination. Social Media and Crowdsourced Mapping Tools became informal yet vital design environments, enabling spontaneous networks to locate missing persons, organize rescue teams, distribute food, offer shelter and build a communication channel between the government and population. As one participant explained, *“the city relied on an immense system of self-organization... if we had waited for the planning department to handle everything, the collapse would have been far worse.”* These forms of distributed organization show that design in crisis operates through orchestration, enabling conditions for data to become action. Transition Designers must, therefore, learn not only to recognize and leverage emergent, decentralized practices but also to design the infrastructures that sustain them over time. This involves developing tools, interfaces, and governance mechanisms that allow decentralized action to grow around shared objectives, while simultaneously ensuring the design of clear, comprehensible, and trustworthy communication channels to effectively build public awareness and readiness regarding critical signals and essential messages.

Transition Design conceives connection itself as a design act: a continuous process of identifying relationships, mapping interdependencies, and enabling collaboration across scales and time horizons. Because transitions are inherently multi-agent processes, designing for them requires integrating diverse actors and actions within shared frameworks of coordination. As one participant observed, *“a linear park, conceived as a sponge city solution, may seem effective, but in reality, it demands much more: relocation policies, data infrastructures, partnerships with civil society, and a responsive public sector,”* describing this as a “strategic multi-action project” that brings together public institutions, private actors, academia, and organized civil society. This echoes Irwin’s [5] insistence that transition pathways must be systemic and iterative, advancing through multiple interconnected projects that operate across time scales and domains. In PD terms, these connections materialize as *Things*: socio-material arenas in which relationships, resources, and responsibilities are made visible and collectively negotiable over time [2]. To sustain such ongoing collaboration, mapping and orchestration becomes an essential design practice - as the backbone of coordinated response when crises occur. This learning process should extend into experiential practice, where designers cultivate understanding by engaging voluntarily with communities.

Designing amid fragility and fatigue: Working in a context of chronic crisis also demands new ways of designing associated with PD that balance technical action with ethical sensitivity. As warned, *“people were resilient the first time they lost their house, then the second, but by the third, resilience becomes unbearable.”* Designing amid fragility requires working with profound ethical sensitivity.

This involves recognizing the affective attachments to place and the psychological exhaustion caused by disasters, which in turn necessitates proposing change without coercion and respecting the defined limitations of the designer’s role, not as a savior, but as a facilitator and orchestrator of systemic collaboration.

In sum, new ways of designing manifest as practices that transform design from a discipline of isolated problem-solving into one of ongoing orchestration, mediation, and capacity-building. By integrating distributed coordination, continuous mapping, preventive sensibility, ethical responsiveness, and multi-agent governance, designers can contribute to transitions that are not only adaptive but regenerative, anchored in the realities of crisis yet oriented toward the long-term reconfiguration of collective life.

4 FINAL CONSIDERATIONS

The 2024 floods in Rio Grande do Sul revealed that it is much easier to react to an epidemic outbreak than to a climate change process that unfolds over 10, 20, or 100 years. This difficulty in sustaining a long-term vision reveals a structural limitation of contemporary governance, which tends to privilege immediate crises over gradual, systemic transformations. The methodology proposed by Irwin is an alternative that helps to bridge this gap. By provoking stakeholders to visualize long-term futures and then trace back the actions needed in the present, Transition Design provides a structured means of translating distant, intangible challenges into concrete, time-scaled pathways for action.

Yet, within a context where the recurrence of floods is no longer a matter of probability but of certainty, articulating future visions grounded in optimistic or utopian attributes, and detached from the immediate circumstances of the event itself, proved to be particularly difficult. The interviews we conducted showed that most ideas and visions were anchored in objective and viable pathways that made sense in the moment, rather than exploring the capacity to imagine radically different futures, reflecting the emotional strain and immediate difficulty of the crisis. To counteract this sense of fatalism, the path forward, for both the present and the future, requires cultivating a profound respect for nature and living in harmonious and proportional relation with ecosystems, as often espoused by traditional or Indigenous cosmovisions. By integrating these perspectives, the design effort can move beyond purely technical fixes to foster a mindset that ensures climate and social justice for the most vulnerable.

In this sense, connections between Transition Design and Participatory Design becomes especially productive. While TD offers a long-term, systemic orientation for change, PD contributes practices for sustaining collaboration, negotiating values, and maintaining engagement over time. Given that the word transition inherently emphasizes change over extended periods, the Transition Design framework anchors participatory processes to decades-long trajectories, fostering accountability and continuous adaptation.

With this exploratory paper, we hope to enhance that there is significant opportunity for both Transition Design and Participatory Design to grow together in complementary ways, by demonstrating how its framework can be applied in contexts of socio-environmental crisis, leveraging localized engagement to realize sustainable systems-level transformations.

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