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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 first volume contains 37 accepted Full Papers. These papers report on substantial and original unpublished research that advances participatory design. All submissions were double-blind reviewed by at least three PC members, one of whom acted as a Meta Reviewer. 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 this Proceedings.

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Designing for Living Together

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Abstract

This essay introduces the main themes of PDC2026 (Peace Dialogue Coexistence. Designing for Living Together) and aims to build a bridge between Design, Participatory Design (PD) and the foci of the conference. In a time marked by escalating conflicts and polarisation, we question whether we have lost our ability to live together and what role PD might play in this. Acknowledging design's historical complicity in structural inequalities and environmental degradation, we nonetheless argue that PD holds potential as a dialogic and infrastructural practice capable of supporting peaceful coexistence. Drawing on key conceptual strands, we frame PD as a bridge-building practice that nurtures empathy, redistributes agency and enables collective imagination. Through engagement with theories of positive peace, environmental peacebuilding, dialogic exchange and post-anthropocentric design, we define design contribution for living together as a relational infrastructure that enables plural publics, including more-than-human actors, to negotiate coexistence. We eventually introduce and comment the main insights from the papers submitted to PDC2026.

CCS Concepts

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

Keywords

Peace, Dialogue, Coexistence, Design approaches

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1 Introduction

Some argue that to be a designer is, inherently, to be an optimist. Geopolitical analysts report that many young people, particularly in countries marked by conflict, appear more embittered than their parents were at the same age [20, 21, 59, 67, 71]. Anger, distress and distrust in institutions seem to be intensifying. The escalation of military, social and cultural conflicts has become unmistakable, manifesting in fractured forms of human relationship, polarisation

and radicalisation, further exacerbated if not ignited by the climate crisis. As we write, in March 2026, a military conflict has just broken out in the Middle East, which scope and consequences are still unfolding. Have we lost our ability to live together? If so, what voice, role, and impact might design have in fostering peace, dialogue, and coexistence?

These questions, and the frustration they carry, are at the core of **PDC.2026** (www.pdc2026.org) and of a growing reflection within the design community about the role and stance in this scenario. We, authors of this article, are academics based in democratic and peaceful countries, where the rule of law is recognized and there is freedom to research and teach. We raise these questions from a position of comfort, aware of our privilege, yet deeply troubled by current circumstances. We are not resigned to nihilism, rather, we hold on to the hope that any profession, expertise or activity can play a role in the present situation. Much has been argued about what design can do, or not, in response to the world's many crises. We acknowledge that, since Papanek's condemnation of mainstream industrial design as socially and ecologically harmful [64], it has become evident that design is structurally implicated in the production of ecological degradation and social inequality, both factors igniting conflicts [18, 29, 48, 64, 72]. Yet the intrinsic optimism we associate with acts of design — a “propositional activity,” in Margolin's words [51] — leads us to argue that design can support also the human practices that foster personal and interpersonal peace [43, 52].

As an epiphenomenon of this growing sensitivity for what design might do to live together in peace, the past few years have witnessed an increase in design-focused initiatives engaging with these themes. Notable examples include exhibitions at the Cooper Hewitt Smithsonian Design Museum and Triennale di Milano that address conflict and social justice. Educational institutions like Politecnico di Milano have launched design challenges, while global networks like Cumulus and ELIA have established dedicated talk series and mentoring programs. Collectively, these efforts leverage design to speculate on more peaceful futures. Broadly speaking, these initiatives show that design can operate in multiple ways. We encounter speculative projects that seek to raise questions, provoke reflection and reveal hidden patterns underlying conflict. We find proposals aimed at offering pragmatic responses to situations of crisis. Others materialise as artifacts that visualise data and contextual dynamics or prototypes of alternative futures, inviting people to experience different possibilities for living together. We learn from them that peace emerges from the will and capacity to shape the quality of coexistence across differences. In this frame, finding ways to reconsider how we relate to multiple forms of intelligence, enable dialogue among entities and co-inhabit the planet becomes



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paramount. Participation is one of the necessary conditions for this to happen.

2 Design and Participation

Community engagement and participation are highlighted as ingredients for peacebuilding [45, 52, 63]. Whilst acknowledging both the potential and the limitations of involving civil society in peace processes, participation is recognised as a condition for dialogue, reconciliation and enduring peaceful coexistence. However, the sharing of perspectives — not only within like-minded communities but across divergent groups — must occur under conditions that bring about peace, which depends on how participation is framed and implemented. As Paffenholz reminds us, civil society reflects the broader society and “is therefore not always the ‘good society’ that can be counted on to support peace and democratisation. Research has found that inclusive, civic, bridging and pro-peace organisations work alongside polarised, sectarian, and occasionally militant civil society organisations” (p.109) [63].

Here a concept that design is familiar with comes into play: empathy, a condition for understanding the needs, viewpoints and frustrations of others. Yet, in situations of conflict, empathy is one of the most difficult capacities to cultivate. There is much to learn about fostering empathy between groups in conflict from the work of Alexander Langer, an Italian activist, journalist and politician who lived in South Tyrol, a region long marked by ethnic tensions. Langer’s work was directed toward enabling cultures to coexist and communicate across differences. In 1994, he wrote a decalogue on the art of living together, in which he prompted behaviours oriented toward mutual knowledge, dialogue and interaction. He wrote: “The more we have to do with one another, the better we will understand each other. (...) Learning the language, history, culture, habits, prejudices, stereotypes and fears of different communities living together is an essential step in inter-ethnic relations” [6, 45–7]. He argued that the presence of multiple ethnic groups sharing the same space should be made visible and understood as the norm rather than the exception, so to “dilute all forms of ethnic exclusivism or integralism in a natural co-existence of many different signs, sounds, smells and institutions” (p. 9). He celebrated the role of those who “mediate, build bridges, jump over walls and explore frontiers.” Might designers be among them? We argue that Participatory Design (PD) and designers can be one such thing.

How PD might foster practices, projects and strategies for living together is the question we now address. To this end, we identify a set of key concepts, drawn from strands of design research, whose principles can inform PD in this effort. This selection is not intended to be comprehensive, but to highlight the dimensions most relevant to our argument.

2.1 Conceptual Strands

Community

A first conceptual strand focuses on the notion of community that lies at the core of several collaborative design approaches. Particularly, we refer to Community-Centred Design, which frames the processes through which social innovation is conceived and developed as a means of generating public value and fostering commoning. [4, 50, 79]. This approach recognises that social innovation

can be controversial and conflictual: heterogeneous actors bring diverse, sometimes opposing, interests that must find ways to coexist within complex systems, where full alignment or shared visions are not always attainable. This resonates with DiSalvo’s scholarship on community-based PD and agonistic democracy [14], which is based on contestation, not consensus, and where PD may expand the ability to dispute. Community-Centred Design operates first through gaining situated knowledge about the community and its habitat, through observation and immersion. It then proceeds to co-design future possibilities with the relevant stakeholders, where design becomes a means of engagement and learning within a community and with the broader society. In this, designers act as facilitators of collective agency rather than problem solvers.

Conviviality

Another strand focuses on conviviality, understood as a lens for thinking and designing, rooted in Illich’s critique of industrial society [41], its productivity paradigm and the modern tools that dominate life. It encompasses ideas such as the Convivial Toolbox [68], Convivial Aesthetics [44] and Convivial Design [27]: they point to the need to rethink design processes and social structures through a reflection on power relations, meaning making and the forms of interaction that sustain people’s autonomy and cooperative engagement with tools and with one another. Accordingly, a toolbox is convivial if it enables participants in the design process to express their imagination with confidence and creative autonomy. Convivial Aesthetics describes a condition that shifts attention from artifacts to communities, social forms and the assemblages of artifacts that support them. It refers to the qualities of immaterial interactions and social configurations that foster a sense of belonging to a larger whole, in which everyone feels able to contribute. Convivial Design, finally, points toward what design could become in a more socially embedded world, and it is tied to an ethos - a set of values guiding how design engages with people, communities and environments. Through its emphasis on agency, capability and co-production, conviviality becomes relevant to PD and invites ethical reflection on the status quo and the imagination of alternatives.

Scenario

The term scenario connects an additional strand of design approaches that we value relevant for PD’s contribution to living together. Linked to Future Studies and Anticipation (the capacity to act in preparation for a possible future state of the world [84]) it refers to a range of imaginative methodologies. Scenario building follows principles that help structure collective conversations about the future. It encourages participants to consider the evolution of hypothetical situations, possible alternatives and the pathways that may lead toward them. As such, it is a collective exercise in imagination that combines actors with diverse perspectives into project-based communities [22] to design around matters of relevance. Design-Orienting Scenarios (DOS) [49] are one family of scenarios: future-oriented narratives that are motivated, illustrated and visualized through solution proposals. Structured around opportunities, DOSs identify, define and co-design transformative initiatives, while clarifying values and capabilities of different actors. They are open collaborative processes, rather than fixed artifacts, retaining an exploratory character [3]. Likewise, Transition Design, which proposes a framework for catalysing societal transitions in

response to wicked problems, seeks to facilitate stakeholders in the co-creation of visions of the future, identifying points where design interventions can be situated [42]. Other strands of work, oriented to critical thinking, are Speculative Design and Design Fiction, which create provocative scenarios to explore alternative futures, question dominant assumptions and stimulate reflection [2, 15, 16] with a political posture.

Experience

Another conceptual strand for our discussion revolves around the notion of experience, which can inform PD processes in multiple ways, particularly when engaging with emotionally and ethically sensitive contexts. Here we consider those approaches that address the emotional and practical impacts of conflict, trauma or exclusion on individuals and communities. Peavey and Ames [65] discuss how Trauma-Informed Design, an approach that contemplates the factors affecting emotional well-being under conditions of stress and adversity, can generate design principles in the field of spatial design. They highlight elements such as human scale, spatial order, wayfinding, communal spaces, accessibility, hierarchy, and symbolism as factors for creating environments in which people may experience inner peace and are likely to act peacefully. Based, instead, on an understanding of others' life conditions, Bodystorming invites participants to experience such conditions through direct immersion, fostering self-reflection, insight generation and prototyping [5, 61]. Extending beyond human-centred experiences, this reflection pertains to our relationships with other forms of agency, questioning how we can sensorially and emotionally connect with non-human living beings, material systems and technological agents.

Power

The work of Costanza-Chock [10] invites us to examine design through the lens of power and the power relations. She advances a strand of reflection on how design practices may reinforce systems of structural inequality and reproduce dynamics of domination at personal, community and institutional levels. Such structural dynamics can be understood as forms of structural violence — a concept that describes how social systems generate inequality and suffering, through established cultural beliefs, political arrangements and institutional structures. Costanza-Chock begins from the observation that those most affected by design decisions often have the least influence over how those decisions are made. Design Justice, which she defines as “a framework for analysis of how design distributes benefits and burdens between various groups of people” (p. 23) [10], proposes a reorientation of design processes toward marginalized people to address challenges through collaborative practices. Design Justice builds on concepts that define structural inequality from different perspectives: (1) intersectionality, which understands ethnicity, class and gender as interlocking systems that do not operate independently [11]; (2) decoloniality, which foregrounds marginalized perspectives — including those of colonized and Indigenous communities — and enables engagement with multiple temporalities and epistemologies [80]; and (3) pluriversality, an ethical praxis of world-making oriented toward the creation of a world “where many worlds fit” [18, 19].

Relationality

Finally, we consider the strand of research that engages with the concept of relationality: the configuration of relationships through

which collective life becomes possible in conditions of mutual respect, reciprocity and active coexistence. This strand encompasses the human-to-human and the more-than-human approaches, acknowledging the radical interdependencies denied by much of modern thinking. Humans often act as they were disconnected from other species, and technologies are thought as subordinate tools or “slaves,” rather than agents within socio-technical assemblages [46]. The term more-than-human refers to the interdependence of living and non-living entities, challenging anthropocentric assumptions and inviting a reconfiguration of how we understand and relate to other forms of life. It calls for a shift toward an expanded embodied awareness and radically different worldviews. As Heitlinger et al. [38] argue, embracing a more-than-human approach “is neither merely including non-humans in Participatory Design processes nor finding methods for their ‘participation,’ but instead a philosophical undertaking” (p.105). Design outcomes cannot be separated from the relations that produce them, which are informed by the understanding of other forms of life. Accordingly, and in line with the origins of PD, we cannot ignore the critical implications of how Artificial Intelligence is shaped and the role of workers in this. Relationality requires deepened engagement and the identification of proxies through which alternative perspectives can be interpreted, entering a logic of co-performance [35] where agency is distributed and collectively enacted.

For us, these strands are intrinsically connected to the ways in which PD can engage with the purpose of living together, particularly through the lenses of Peace, Dialogue, and Coexistence, as we argue here below.

3 Peace

Peace is an act of will rather than a natural condition. It can be understood as a state of mind, body and spirit, a state of harmony with the world around us. Following McCuskey Shepley [52], peace is the ultimate form of beauty. Yet, from every perspective, peace remains an elusive concept. As Bartolucci [1] notes, the conceptual starting point for defining peace has traditionally been war, leading to the understanding of peace as the “absence of war.” While this definition may suffice for scholars concerned with understanding the causes of war, “for those who want to focus on the conditions that generate or maintain peace, such conceptualization does not suffice” (p.273) [1].

3.1 Positive Peace

The seminal work of the sociologist Johan Galtung offers a distinction between negative peace — the absence of violence — and Positive Peace, which entails the presence of social justice and well-being [30]. Rather than defining peace in opposition to war, Galtung reframes it in relation to violence, understood as any action or condition that causes a person's “actual somatic and mental achievements to be below their potential achievements.” Peace, ergo, requires eliminating political oppression, inequalities, poverty, hunger, exploitation and limited access to basic rights. Galtung identifies three forms of violence:

Direct, physical or psychological: it refers to behaviours involving force intended to harm, damage or undermine a person's physical or emotional integrity.

Structural, embedded within systems: it refers to social, political or economic conditions that intentionally or unintentionally produce systemic inequalities preventing basic needs from being met.

Cultural, rooted in the “natural order of things”: it refers to societal norms and beliefs that legitimise or normalise direct and structural violence. It often manifests in discourses that fuel anger, fear, hatred and misunderstanding between groups [12].

Contemporary design discourse is increasingly attentive to these forms of violence. Well-being and mental health, for instance, are central concerns in approaches that address the emotional experiences of people affected by trauma. The mentioned Trauma-Informed Design, along with ethnographic methodologies, seeks to provide both methodological tools and ethical postures for engaging with complex and intractable situations. Equally relevant is the growing reflection on design’s role in reinforcing or challenging the power relations embedded in structural inequalities, that is, structural violence. Galtung’s work [31] resonates with Amartya Sen’s Capability Approach of 1990: violence is any condition that prevents individuals from exercising their substantive freedoms, to “live the kind of life they value and have reason to value.” Building on this, designing for peace should be not simply about preventing conflict, but expanding the conditions under which diverse forms of life can coexist, feel capable and welcome to bring their contribution.

3.2 Environmental Peacebuilding and Ecosystems for Peace

Environmental issues are increasingly becoming sources of conflict. Environmental Peacebuilding, a field of study at the intersection of peace, conflict and the natural world, recognises that a healthy environment is a condition for conflict prevention, mitigation, resolution and recovery [6]. The connection between design and environmental issues may seem self-evident, however, its association with peace is less commonly articulated. It opens a field of possibilities for design, particularly when addressing controversies related to environmental transitions.

Civic participation, social innovation and deliberative democracy are increasingly deployed to address challenges raised by the climate crisis. PD is adopted in these contexts, sometimes with contested approaches and outcomes. Its function is to bring diverse actors representing opposing positions at the table, with the complexity and power dynamics this entails. Such processes may adopt different postures, depending on how participation is framed and facilitated [69]. In peace studies, these integrated configurations of actors are described as Ecosystems for Peace: arrangements that combine bottom-up and top-down approaches, integrate the knowledge of underrepresented groups with technologies and bring together those who argue for the intrinsic value of nature, with those who emphasize human protection and development [6].

Several contributions to PDC2026 discuss the role of design in creating spaces where communities deliberate, imagine and act together. They suggest that one of the most promising ways to integrate participation into policymaking lies not only in improving institutional uptake, but in strengthening the infrastructures that enable participation, informed engagement and collective action

over time, holding imagination, reflexivity and agency together (see: *Participating in Designing Sustainable Futures: The Challenges of Imagination and Envisioning* - by De la Rosa, Broadbent and Jégou; and *Imagination, reflexivity and agency in institutional change and public policy* - by Kimbell and Mortati, in this volume).

3.3 Civil Society Engagement

Thania Paffenholz, a policy advisor specialized in inclusive peace processes, examines whether, how, when and under what circumstances civil society (organisations not purely driven by private or economic interests) can fulfil a peace-supporting role [62]. Inclusion is key for peacebuilding, because one of the main reasons people resort to violence is to contest their exclusion from matters of importance. She argues that, although this is still far from routine, civil society can play a role in local peacebuilding through participation in negotiations, so strengthening sustainability and ownership of agreements. She outlines modalities through which this can happen:

Direct presence at negotiation tables and/or problem-solving workshops, in connection with leaders of the parties, where rooms for discussion are provided without pressure to reach agreement. In design terms, these are “safe spaces” where speculative exploration is allowed beyond existing constraints. A relevant issue here concerns the presence of marginalized groups.

Advocacy and monitoring functions, through commissions or forums observing issues such as human rights conditions during or after agreements. This form of participation can be related to Community-Centred and trauma-Informed Design, approaches grounded in immersion, care and ethnographic sensitivity [39, 65].

Consultation and public decision-making, at different stages of peacebuilding. Here PD can contribute to informed engagement and capability development, alongside supporting democratic competencies on socio-technical governance (see: *Participatory Design as a Unifying Lens for Democratic Digital Futures* – by Mariani and Schade, in this volume).

Shaping public climate, expressing advocacy through activism and culturally rooted practices that enable dialogue and socialisation across groups. This modality of participation resonates with Design Activism [24, 25].

Inspired by Paffenholz, we can see possibilities for PD to enter even peace negotiation phases, not necessarily as a problem-solving tool, but as a mode of constructive engagement with conflict, transforming rather than silencing it and creating cultural infrastructures for agonistic dialogue (see: *Weaving Peace in a World of Conflict: Conversations about Participatory Design* - by Maffei, Rugeles Joya, Campbell and Cipriani in this volume). We can also see the potential for design to contribute at all stages of peacemaking: from prevention of conflicts to alleviation of traumatic conditions and reconstruction of the foundations for coexistence. Pelle Ehn defines PD activities as “peace-making experiments in the small” (p. 292) [17]: hence, those he defines as “PD activists” should join forces with the peace movement, recognizing the limits of their expertise, yet also acknowledging that engagements across parties and borders, even in agonistic contexts, remain areas where PD may contribute.

4 Dialogue

Design practice is often understood as an exchange oriented toward clarifying positions, reaching synthesis, fostering understanding or enabling convergence. Borrowing from Sennett [70], we might say that design can mobilize two modes of exchange: the dialectic, in which the aim is to win an argument, take a stance or persuade; and the dialogic, in which the aim is to understand without necessarily resolving differences. For Sennett, dialogue is not about agreement, but about sustaining interaction across differences, through listening, curiosity, openness to ambiguity and tolerance for unresolved tension. Accordingly, living together is not necessarily a state of harmony, but a practiced capacity to exert listening, remain in relation amid disagreement and prevent, alleviate or heal conflicts. PD, understood as a dialogic practice rather than a consensus-building tool, may offer one such infrastructure for coexistence.

4.1 Dialogue as infrastructure

Dialogue is intertwined with democracy, not only with formal procedures such as voting, but with the ongoing cultivation of active citizenship, deliberation and collaborative problem framing. When democratic systems enter into crisis, the need for spaces of debate and conditions for open collaboration becomes acute [24]. How can design help create the conditions for diverse forms of expression, negotiation and collective learning to flourish?

If dialogic exchange depends on listening and openness, in polarised contexts dialogic capacities do not emerge spontaneously; they must be scaffolded. PD may do this by creating safe spaces for engagement and providing structured ways for participants to articulate concerns and values. In doing so, it supports democracy not simply by “including citizens,” but by strengthening the foundations that allow plural publics to exist and act together [26].

When it comes to conflict and peace, democratic and socio-ecological breakdown are entangled. Environmental disruption and extractive economies generate insecurity, unfairness and unequal exposure to risk, so fuelling distrust and antagonism. Adopting a Positive Peace perspective, climate emergency and ecological degradation become peace questions because they erode capabilities and intensify structural violence. Here, participation through Design Activism can be positioned to transform the conditions that make conflict more likely. Activism can be read as the continuation of design’s cultural agency under urgency, especially as younger generations and self-organised citizen groups mobilise in response to institutional delays to regenerate commons [24, 53].

PD, then, may connect democratic participation and socio-ecological transition in practical way, creating spaces and systems that enable citizens and institutions to co-produce responses to complex challenges. This includes designing for active citizenship through environments that support learning, critical reflection and knowledge exchange, as well as through spaces that facilitate encounter and collective use. Approaches such as Tactical Urbanism demonstrate how small-scale, temporary interventions can prototype alternative uses of space, gather feedback and strengthen community agency before permanent commitments are made. Such iterative experimentation is a democratic competence: it lowers barriers to participation, allows contested issues to be explored and helps build legitimacy through responsiveness. Contributions

to PDC2026 reinforce this interpretation of dialogue across differences as a space in which disagreement, contradiction and even irreconcilable positions are inevitable, yet accepted as politically meaningful (see: *Reframing Participation: Inclusion and Democracy in Participatory Design* - by Villari and Scupelli, in this volume).

Alongside physical infrastructures, design mediates democratic participation through digital ones. Participatory budgeting platforms, consultation tools and civic apps illustrate how interfaces and facilitation logics can either enable dialogue or reproduce exclusion. Here, the design challenge is political: whose voices are made legible, how disagreement is handled, what forms of evidence count and how power asymmetries are mitigated. Well-designed participatory systems can expand participation beyond voting toward sustained civic engagement, deliberation and collaborative problem-solving.

4.2 A Matter of Language

The precondition for dialogue is sharing a language. Linguistics teaches us that language is power: the more we develop our linguistic competence and shape what can be said and how it is said, the more we become empowered citizens capable of participating in democratic dialogue [26, 32]. Vera Gheno introduces the notion of “linguaggio ampio”, which may be translated as “broad language.” [33, 34] It goes beyond inclusion - a term that imply that diversity is incorporated into the norm - and instead refers to widening the symbolic and relational space within which coexistence becomes possible. Broad language leaves room for imagination and representation, thus embracing complexity within a condition of openness. It also entails broadening linguistic horizons, thereby sharpening mental and existential horizons, since language gives form to our thoughts and perceptions. In PD’s terms, this resonates with:

the ethics of listening to those who are experts in their own lives yet are often excluded,

the creative capacity and openness required to imagine alternative future scenarios,

the design approaches that acknowledge the multiple perspectives from which we must begin in our reciprocal efforts of listening and understanding.

The question, then, becomes: how broad can language be and who is enabled to engage in dialogue? From PDC2026, it emerges that the language of participation cannot be reduced to speech and rational argumentation, because these modalities exclude those whose participation does not conform to dominant communicative norms. We may also question whether and how our commitment to engaging in dialogue with other-than-human actors can be framed. Dialogue in these relations requires an expanded understanding: it evolves beyond verbal communication to sensory attunement. It can be a messy co-performance where agency is distributed and enacted across human and non-human actors [35, 57] and must shift to encompass other intelligences, sensibilities, forms of agency and ways of relating, to open up new possibilities for collective survival. These worlds require us to experiment how other forms of life and technological agents can be interpreted and involved. Plants, for instance, are often perceived as “quiet,” yet this is so only to human eyes. Arts and literature help us glimpse vegetal, non-human ways of being and sensing [54]. Mertehikian explores

the creative processes of Latin American artists, showing how they act as mediums, communicating with natural and spiritual worlds. These practices draw on multispecies anthropology and engage with invisible forces [55]. Likewise, Yong [82] reveals the immensity of the world through the senses of animals, teaching us that there is far more beyond what we ourselves can perceive.

The post-anthropocentric shift raises challenges related to dialogue in the context of PD. They include: persuading human stakeholders to engage in dialogues with non-human entities [54, 66, 76, 77, 85] while defining the scale of these interactions to address macro-scale inequalities and injustice [8, 41, 65, 81]; identifying human and non-human actors within complex assemblages [28, 50, 83, 84]; redistributing agency to reduce power gaps [81]; respecting and obtaining the participation of non-human actors [9, 11, 46, 47, 56, 58, 81]; supporting communication and mediating the tensions [69, 75, 77]; and bridging the gap between available and lacking knowledge to sustain dialogic exchanges [36, 67, 79]. The democratic question therefore expands: including ecological limits and non-human interests does not mean collapsing them into purely human proxies. Designing for living together means designing systems and places where people can participate in public life while negotiating coexistence within ecological boundaries.

5 Coexistence

Modern social-ecological crises are not merely technical or economic failures; they are fundamentally crises of metaphysics, the deep assumptions about reality [40]. The drivers of environmental degradation and social fragmentation are rooted in cultural and moral frameworks that dictate our relationships with one another and with the broader community of life. Achieving coexistence in peace, therefore, necessitates a critical reflection on these relationships.

5.1 Living together with others

Many religions and traditional Eastern philosophies frame peace through the lenses of interdependence and relationality. In Christianity, for instance, peace is viewed as a gift from God – a “tranquility of order” achieved when we live in a right relationship with the Creator and in harmony with Its creation. This stands in contrast to paradigms of exploitation and dominance; instead, it seeks to restore an order of creation characterised by interdependence. In Buddhism, inner peace is achieved by realising that all things are interconnected and inseparable; as self-centredness fades through the recognition that our well-being is inextricably linked to that of others, a state of genuine harmony emerges. Similarly, Shintoism finds peace through the respect of the gods dwelling within the natural world, while Confucianism views harmony as a vital dimension of internal moral cultivation that ultimately leads to harmony or social order.

These philosophies have a wider perception of the realm of coexistence. Likewise, in the post-anthropocentric era, relationships based on mutual respect and interdependence must extend beyond mankind to encompass all beings [23]. The growing body of knowledge under this theme in PDC2026 demonstrates a shift in design practices toward establishing these symbiotic relationships. With reference to AI, several key contributions signal a move toward

post-anthropocentric PD (see *Participation and the Troubles with Intelligence* - by Giaccardi, Roudavski and Tironi, in this volume). These include the integration of indigenous knowledge systems into AI development, the use of embodied and performative methodologies, the simulation of non-human agency and the adoption of cosmological reframing. Although these contributions demonstrate a field in transition, the authors highlighted the “gravitational pull of anthropocentrism” (ibid). Specifically, they note that many projects rely on a limited technical understanding of AI and continue to engage with non-human entities through human-centric proxies. The authors argue that design is not only a discipline oriented toward problem solving but also a “field that develops approaches to communication and collaborative decision making,” a shift that necessitates humility to reveal what remains “outside the frame: other intelligences, sensibilities, forms of agency, and ways of relating and world making” (ibid., 5-6).

Similarly, PD is undergoing an epistemic and methodological shift (see *Towards Multispecies Participation in More-than-Human Worlds* - by Vergani, Tomico, Pasari and Forlano, in this volume), expanding participation beyond traditional linguistic dialogue to include ethical considerations. This shift directly addresses the previously noted reliance on human-centred proxies.

5.2 Design for coexistence: finding a middle ground

Coexistence in the anthropocentric era requires redistributing agency to marginalised actors. This involves disagreement, tensions and conflicts that, as discussed, are not incompatible with living together in peace. Rather, this is a dynamic quality of relationship within the bounds of mutual respect, which incorporates tension and difference without allowing them to descend into fragmentation or destruction [13]. Project Tiger, a conservation programme in India, exemplifies the complexity of a post-anthropocentric intervention. It was designed to protect the endangered Bengal tiger from habitat loss and poaching in the early 1970s. The core strategy adhered to a Deep Ecology framework: setting aside vast areas of land as “pristine wilderness” and minimising human interference [37]. By biological metrics, the project is a success, as tiger populations have increased. However, the creation of these reserves required the physical displacement of local peasants who lost their means of subsistence, to create a space for elite consumption. The project’s success is built upon the exclusion of these human communities while the state and the commercial tourism industry benefit from selling “a glimpse of the pristine wilderness” to wealthy outsiders [37, 73]. To guide designers through disagreements and conflicts in practices like this and to mitigate unintended consequences, post-anthropocentric design can benefit from a value system or ethical framework. A notable example is the set of conservation virtues proposed by Hoffman and Sandelands [40]. Imbued with a religious perspective and business mindset, virtues such as humility, respect, selflessness, moderation, mindfulness and responsibility serve as principles for action.

We argue that designing for coexistence in the post-anthropocentric era involves finding a middle ground between



Figure 1: Graphic visualisation of the concepts discussed in this essay with reference to the PDC2026 conference.

anthropocentric and non-anthropocentric values. This implies re-defining human needs beyond self-interested desires and shaping human actions towards the good of the universe [60, 74, 78].

6 Signals

We may define PD as a way for design to engage in dialogue. We argued that dialogue is a condition for peaceful coexistence and that it requires cultural, social and technological infrastructures to take place. We see the connection between peace, dialogue and coexistence as a virtuous cycle, a continuum of efforts that requires dedication over time.

War is a state. Peace is a dynamic process, a tension toward a goal that may never be achieved but must be constantly pursued. In it, the presence or absence of violence is never absolute. Peace can therefore be understood as an asymptotic condition within interconnected realities, whose internal dynamics depend on our actions [1] and design actions.

We see the PD community as deeply engaged in the discourse around these themes, which are rooted in its very history and, at the same time, have resurged with renewed urgency. Faced with the enormity of military wars, the direct violence perpetrated by belligerent regimes and the humanitarian, social and environmental catastrophes that follow, it may seem that no action is possible at our scale or within our expertise. Yet, from the design community, signals of possible, humble, contributions emerge. And so, we come to understand that the efforts of PD toward living together may take different directions we attempt to outline here (Figure 1).

First, both the PD process and its outcomes hold distinctive relevance. They follow the Socratic principle to stimulate thinking through continuous questioning, challenging assumptions, and revealing contradictions, rather than providing definitive answers.

Second, designing for peace is not simply about preventing or alleviating conflict, but expanding the conditions under which diverse forms of life can coexist, express dissensus, thrive, and feel capable and welcome to contribute. A framework of conviviality

— both as the context in which PD takes place and as an outcome it may generate — best captures design practices that sustain autonomy and cooperative engagement, even when challenging the status quo.

Third, PD may work as empowerment at individual, community, societal and even terrestrial levels, if languages for dialogue are cultivated and individuals remain open to negotiating power and critically reshape the relational, ecological and political configurations of collective life. Empowerment involves developing the capabilities and agency needed to exercise substantive freedoms, thereby challenging all forms of violence.

Forth, designing is an intentional act. Working together toward a pragmatic goal may help overcome divergences, opposing motivations and conflicting agendas, in so doing fostering project-based communities. Collaboration may nurture empathy, listening and appreciation of each other's capabilities. Participation expresses an intention toward dialogue and improvement; as such, it is an act of optimism, even in the darkest times.

Finally, PD approaches, methodologies and philosophies, regardless of the specific subject of application, are themselves intrinsic means for living together, when guided by a commitment to understanding and collective betterment. Peace and coexistence can become by-products of participatory processes when genuinely practiced.

PDC2026 is organized around these themes and signals, gathering the design community around a shared epistemological urgency and highlighting the vitality, plurality and experimental nature of PD theory and practice.

We recognize that PD can engage with the dynamic conditions of peace and coexistence in multiple ways, and that reflection and experimentation in these areas are still emerging. This remains a frontier to be explored, one that will likely involve failures, limitations and disillusionments that may stem not only from the well-known difficulties of participatory processes, but also from questions about the recognition and legitimacy of PD across the

diverse contexts and scales in which peacebuilding, dialogue and coexistence take place. In fact, engaging in these domains also requires recognition beyond the design and participatory communities. As participatory designers, we are therefore called to make our work visible, relevant, and accountable to a wider range of publics, organisations and scholars operating bottom-up and top-down in this sphere.

AI use

We have used ChatGPT 5.2 to proofread and streamline text and Google Gemini to proofread the text and format the citations and references.

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Participatory Design Back to its Political Roots : Insights from the Full Papers

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Abstract

This introductory paper to the PDC 2026 full papers reflects on the political foundations of Participatory Design (PD) at a time marked by conflict, polarisation, and global crises. Drawing on thirty-seven contributions organised into conversations, it traces how PD's political dimension is articulated across diverse civic, institutional, digital, marginalised, and multispecies contexts. Rather than treating participation as a methodological feature, the paper frames PD as sustained political work unfolding across infrastructures, scales, and temporalities. Building on this analysis, it advances a set of political commitments aimed at discussing neutrality, resisting instrumentalisation, re-politicising the designer's role, engaging larger scales, embracing longer temporal horizons, envisioning plural futures, cultivating multispecies politics of care, and navigating uncertainty. In the face of escalating wars and deepening conflicts, this essay distils the commitments proposed by the accepted papers and offers a modest contribution to peacebuilding, social justice, and transformative change.

CCS Concepts

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

Keywords

Participatory Design, Political Commitment, Peacebuilding, Democracy

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1 Introduction

In this introduction to the full papers of the PDC 2026 we wish to provide a context for the following contributions elucidating some concepts that foreground the role of Participatory Design (PD) in fostering peace, dialogue and coexistence. Thirty-seven full papers have been accepted out of 144 submissions, spanning

diverse geographic regions and encompassing both urban and rural contexts across Africa, Asia, Europe, North and South America and Oceania, with a different degree of representation. They have been organised into seven conversations, according to a correspondence of theme, that serve also as basis to outline the following sections. We chose to organise the papers around a series of conversations to create experimental dialogical spaces addressing emerging issues, all engaging with a broader question: how can PD facilitate living together in a world marked by disconnection, fragmentation, and conflict? The full papers do not offer ready-made solutions; rather, they open new perspectives and provide cases that invite critical reflection and further development.

Among the variety of concepts emerging from the contributions, we observed a recurring emphasis on the political dimension. This is why the present introductory paper is entitled Participatory Design Back to Its Political Roots: it seeks to reflect on the political foundations of PD. Now more than ever, in 2026, PD requires a strong political commitment to fostering peace, dialogue, and coexistence. As early as 2018, Bannon et al. expressed concern that PD was becoming diluted, arguing that “it has spread itself across geographies, ideologies, methods, and time itself – losing definition or political teeth” [1]. This observation still appears strikingly relevant today. More recently, Smith et al. [25] identify four emergent agendas for PD: politicising, diversifying, relationality, and transforming, highlighting how these directions build on longstanding concerns while introducing new emphases. The politicising agenda foregrounds strong political aims of shifting power and agency towards marginalised voices through design, ensuring that those affected, yet previously excluded, are actively involved in shaping decision-making processes. In line with this agenda, the present paper calls for renewed attention to and reaffirmation of PD's political roots in workplace democracy, extending such commitment to additional domains by confronting today's pressing societal and environmental crises through activism and tangible impact, as reflected in the full papers. To address urgent challenges, PD must strengthen its political dimension by moving beyond small-scale interventions towards deeper systemic engagement [4]. Bardzell likewise questions whether PD's “democratic design experiments (in the small)” should – or can – scale up [2]. Frauenberger et al. highlight how the effects of PD frequently remain bounded within the specific socio-material contexts of individual studies; although this situatedness is essential to engage with contextual complexity, it can also mean that the resulting insights and tailored interventions struggle to travel, scale, or inform practices beyond their original setting [12]. Issues such as peace, social injustice, climate change, migration and others clearly exceed the reach of localised initiatives and call for

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structural responses grounded in a strong political commitment. The urgency to reconnect PD with its political dimension is not new: the past decade has been marked by heightened attention to the political responsibilities of design, particularly in scaling and supporting PD initiatives across contexts [5]. In this regard, the notion of institutioning points to the practice of working within and reshaping institutions through PD, emphasising the capacity to understand, navigate, and transform institutional structures as a condition for achieving sustained impact and extending participatory processes [14, 29]. Institutional constraints inevitably shape what PD can accomplish, while recognising these limitations is essential to avoid overestimating its potential, it becomes crucial to identify opportunities through which PD can still foster meaningful change [16, 20]. The selected papers contribute to this ongoing debate by framing participation not merely as a methodological feature or procedural requirement, but as broader political work unfolding across scales and over time.

2 The Political Dimension of PD Across Full Papers and Conversations

In this section, we briefly move across the different conversations to highlight key issues emerging from the papers, each connected to distinct ways of embedding the political dimension mentioned above. Although not all thirty-seven contributions can be discussed individually, they span a wide range of topics – including migration, ageing, incarceration, healthcare, nature, youth marginalisation, the erasure of Indigenous knowledge, etc. – and emerge from diverse contexts and scales, encompassing public administration, digital environments, and more-than-human worlds, to mention a few. This great variety reflects the diverse geographies of the contributions as well as the multiple ways in which PD is framed, conducted, studied, and evaluated, pointing to a more pluriversal approach to PD that acknowledges different ways of knowing and making worlds [10, 28].

2.1 Conflicts and Participation – beyond the supposed neutrality of PD

The three papers included in the conversation *Conflicts and Participation* frame PD not as a technical means to resolve conflict, but as a reflective and political practice that enables constructive engagement with difference.

In *Two-way Co-Design: Learning from the Solid Lines Project*, situated in Australia, the authors introduce a methodology grounded in relational accountability, respect for Indigenous protocols, careful negotiation of knowledge-sharing boundaries, and the centring of Indigenous leadership. The paper illustrates how PD can become a space for negotiating power and redistributing authority, fostering coexistence through the creation of a “third space,” where global industry systems and local Indigenous knowledge meet and mutually transform one another.

The paper *Designing Community Trust through Collective Intergenerational Memory Sharing* addresses tensions within the Vietnamese diaspora, in which conflicting political narratives and historical memories fuel division. Through community-based workshops, the authors create supportive environments for intergenerational storytelling about migration and war. Here PD is understood as a

means of rebuilding trust and fostering reconciliation, showing how locally rooted, intergenerational exchange can counter polarisation shaped by global information dynamics.

Participants on Participation draws on Mouffe’s agonistic theory [5, 19, 22] to frame PD as a space where conflicting perspectives are engaged rather than resolved. Focusing on marginalised youth, the paper examines how participation can build epistemic authority and foreground their “matters of care.” Through a set of “design for equivalence” principles, it positions PD as a means to challenge structural inequalities in health justice by empowering excluded voices and fostering collaborative yet critical transformation.

The entire conversation is shaped by Mouffe’s political theory of agonism, which suggests that conflict cannot be eradicated but should be transformed from antagonism into agonism, where opponents are engaged as legitimate adversaries rather than treated as enemies. In this line, PD is conceived as a practice that enables conflicting perspectives to coexist and be negotiated, it becomes a space for resistance and transformation within global conditions shaped by colonial legacies, neoliberal systems, and technological infrastructures that increasingly intensify local conflicts.

Beyond Mouffe’s agonistic theory, this conversation is deeply informed by feminist scholarship and by the concept of the “ethics of care” [11, 23, 30] understood as profoundly political because it moves care from the private, moral sphere into the public, structural domain of justice and power. The papers offer a structural interrogation of power and call for its fundamental reconfiguration, shifting both knowledge production and decision-making authority away from dominant global systems toward locally situated actors. Here, the political dimension becomes even more explicit: from this perspective, in a world marked by deepening polarisation, nationalism and conflict, PD can no longer be regarded as a kind of neutral instrument but must be understood as a deliberate and rigorous political practice shaped by ethical responsibility. This opens space for further research to explore new directions in PD processes, situating participation within politically charged and epistemologically plural spaces in pursuit of more just futures, as similarly suggested by Geppert and Teli in their paper *Participants on Participation*.

2.2 Democracy and Participation – towards a more politically conscious design of digital and civic infrastructures

The four papers included in the *Democracy and participation* conversation converge around a view of PD as a common framework for reimagining democratic digital and urban futures. They suggest that democratic legitimacy is increasingly shaped by the ways in which digital and civic infrastructures are designed, managed, and embedded within institutional frameworks. At the heart of the conversation lies a political question about who shapes the (digital) infrastructures that will govern collective life in the decades to come, and who participates in their use.

The paper *Mediating Digital Security: Participatory Learning with Older Adults in smartphone Café Sessions* examines how older adults engage with digital technologies in relation to privacy, security, and participation. Through community workshops, it shows that digital inclusion relies not only on accessible tools but on relational

infrastructures that foster trust, peer learning, and mediated support. By proposing a model of “participatory infrastructure,” the paper addresses capacity asymmetries through sustained, trust-based learning environments rather than formal decision-making alone, broadening participation to include ongoing civic enablement.

The paper *Enacting Utopias: A participatory Design Approach to AI* proposes a PD approach to AI grounded in traditions of empowerment and workplace learning, positioning PD between utopian and dystopian narratives. Through workshops conducted with a trade union and its members, it demonstrates how participatory methods can build AI literacy and collective capacity, enabling workers to critically assess and influence how AI is introduced into their organizations. Rather than intervening at the level of platform architecture, the study frames PD as a mediating practice that equips actors to engage with AI systems.

The conversation examines whether digital and AI-mediated infrastructures are designed to meaningfully support participation rather than automate it, positioning citizens and stakeholders not simply as data subjects but as active co-designers whose voices shape these infrastructures and inform their ongoing use beyond token consultation.

As originally stated by Beck [3], PD “needs to become broader” and actively contribute to the politically conscious design of digital and civic infrastructures where public discourse unfolds. However, as Delgado et al. [8] point out, despite increasing agreement on the importance of involving citizens and stakeholders in such design, there remains significant diversity in the methods and theoretical frameworks used to enable such participation, as well as in the underlying aims that participation is meant to serve. In this scenario, the diversity of approaches and aims calls for a more mature, politically grounded, and clearly articulated contribution from PD, one capable of clarifying its normative commitments and reinforcing its capacity to intervene in the socio-technical arrangements within which public discourse unfolds.

2.3 Democracy and Participation: Inclusion – reclaiming a more political role of the designer

The conversation *Democracy and Participation: Inclusion* features ten full papers that approach inclusion not as an add-on to participatory processes, but as a delicate condition that requires continuous, intentional cultivation and support over time. In this perspective, the focus on inclusion is not viewed as an attribute, but as an actual political work that goes beyond instrumental and procedural interpretations of participation. The topics addressed are diverse and concern marginalised communities, including people with disabilities, incarcerated individuals, minors, older adults, and refugees.

The paper *Rethinking Participatory Design as a Political and Pluralistic Practice* examines a PD initiative in an Italian prison for young adults through a political lens. Drawing on agonistic pluralism, it shows how a simple list of advice for newcomers acted as a boundary object that enabled dialogue and debate, arguing that disagreement, rather than consensus, can foster coexistence even within restrictive institutions. Here, the political dimension of PD is explicitly reclaimed: the paper advocates for renewed politicisation,

resisting solution-oriented paradigms and instead foregrounding dissensus, pluralism, and participants’ embodied knowledge as foundations for democratic coexistence in marginalised contexts.

A similar perspective emerges in the paper *REVERSELAB: Reclaiming Space and Relations in Prison through Art and Participation: Designing for Dialogue and Coexistence in San Vittore prison*, which illustrates how an artistic approach enables incarcerated individuals to re-emerge as political and narrative subjects. Rather than generating consensus or predefined solutions, design creates a space for visibility and testimony that challenges institutional practices of erasure. Here, the artistic intervention and the associated participatory process become an actual political gesture and legitimise dissensus.

The paper *Queer, Hybrid Participatory Design: Relational Practices and Norms for Coalition Building with Rural LGBTQ+ Communities* reports on the first year of a hybrid PD project with an LGBTQ+ coalition in rural northern Utah. Drawing on queer relationality theory, it explores how co-created norms of “fixed safety” and “fluid engagement” reshape hybrid spaces to prioritise intimacy and collective agency over productivity. The study highlights the role of intentional coalition-building in addressing political marginalisation and rethinking collective action across geographic and political boundaries.

The conversation as a whole engages with studies focused on marginalised communities, which consistently draw on feminist approaches to PD [21, 32]: they emphasise that design practices are always situated, embodied, and shaped by power relations. The political dimension of PD here clearly emerged through the idea of positionality: the designer is understood as a positioned subject whose history, identity, and institutional location shape what becomes visible, participable, and legitimate. This perspective, that goes beyond the designer as a neutral facilitator, highlights the need of re-politicizing the designer’s role, whose positionality and responsibility are treated as conditions for inclusion.

Moreover, some papers of this conversation foreground another inherently political dimension: participation requires a long-term horizon, since inclusion can only develop through continuity and sustained institutional commitment. In the paper *Rebuilding Place, Reframing Identity: Participatory Visual and Environmental Tools for Intercultural and Marginalized Communities*, participation is conceptualised as a spatial, symbolic, and relational practice that fosters the long-term reconstruction of belonging in contexts shaped by displacement and marginalisation. The core claim is that agency and recognition do not arise from episodic interventions, but from sustained participatory infrastructures [17, 26]. This entails a political commitment to a long-term vision, challenging the short-term and solutionist logics that dominate many processes and moving beyond ready-made approaches. Such a commitment implies an understanding of PD as a complex, ongoing, and long-term political action.

2.4 Civic Issues and Participation: urban matters – against the instrumentalisation of PD in policymaking

The conversation *Civic issues and participation: urban matters* includes five full papers that illustrate how PD can operate not

merely as a project-based intervention, but as a practice embedded within infrastructures, governance frameworks, and policy dynamics. Such dynamics become particularly evident at the urban scale, where municipalities and public administrations mobilise participatory processes to involve diverse communities in broader transformation agendas. Within this context, the five contributions address diverse and multiple issues ranging from digital governance to migration, foregrounding a political stance that resists reducing PD to a toolbox and instead positions it as a transformative practice shaping how public issues are conceived and addressed.

The paper *Agentic PD: Rethinking Participatory Design through a Transformative Agency Lens* links established debates on empowerment and agency in participatory design with Transformative Agency (TA) grounded in Cultural Historical Activity Theory. Drawing on two educational cases in Finland and Denmark, the study shows how TA concepts support participants in seeing themselves not only as co-designers, but as active agents of change. By combining PD and TA, the paper positions participation as a catalyst for democracy that extends beyond workshops toward sustained, long-term transformation.

In *Making Policy Work: Navigating Organizational Inertia Through Participatory Design*, PD is conceptualised as a practice of enacting policy within complex organisational settings. Drawing on design anthropology and infrastructuring and based on collaboration with midwives in a hospital maternity ward, it shows how PD can support democratic deliberation and experimentation in the local implementation of healthcare policy. It argues that, under conditions of uncertainty, effective policy work requires flexible, practice-oriented engagements, framing policy as something negotiated in action rather than fixed in advance.

The paper *Uncovering Hidden Inequalities through Participatory Service Design* investigates how institutional structures and normative assumptions shape public employment services in Finland, often producing unjust outcomes. Based on interviews with immigrant job seekers and employment officers, it argues that recurring service failures reflect systemic logics rather than isolated breakdowns. By introducing the concept of institutional service failure, the study highlights how injustice can be embedded within service systems and underscores the role of design-led inquiry in promoting institutional responsibility and more equitable public services.

These five papers collectively suggest that, while PD is becoming embedded within policymaking and governance structures, such institutionalization introduces important challenges. In this regard, Huybrechts et al., in their work on institutioning and institutional dynamics, caution that participatory practices may be instrumentalised, depoliticised, or reduced to implementation tools, rather than sustaining their democratic and transformative potential [14]. Moreover, the papers warn against equating participation with empowerment, noting that without confronting institutional structures and power relations, participatory processes may reinforce existing inequalities and displace responsibility for change onto participants [31]. From this perspective, empowerment is not a predefined outcome of participatory methods, but a contingent and negotiated accomplishment shaped by how such processes reconfigure roles, responsibilities, and possibilities for action [7].

2.5 Civic Issues and Participation: sustainability – envisioning futures is a political action

The conversation *Civic Issues and Participation: Sustainability* brings together four full papers addressing diverse topics, yet all examine how PD can be embedded within democratic and political processes to foster the changes and actions urgently called for by citizens, particularly when engaging with issues such as climate crisis.

As an example, the paper *‘It’s not only my issue, but also a community issue’: an Atlas of Design Actions for Commoning Flood Adaptation* presents the Atlas as a participatory tool to support community-led climate adaptation. Tested in a co-design workshop in Australia after the 2022 floods, the Atlas facilitated dialogue among residents, experts, and public authorities around hybrid adaptation strategies. Framed through commoning and infrastructuring, it is conceived as a dynamic infrastructure fostering collective decision-making and more decentralised approaches to flood governance.

Similarly, the paper *Recollecting with Collectives towards Coexistence: A Theoretical Framework for Participatory Design in Times of Climate Crises* develops a conceptual lens for PD that supports coexistence amid climate uncertainty and social polarisation. Introducing “recollecting” as a political and relational design approach grounded in collective memory, it challenges technocratic solutions and identifies three key dimensions: reconnecting with past attachments, mobilising memory to shift power relations, and archiving memory as a living resource for continuity and action. The paper argues that designing with collectives can foster regenerative change grounded in care and solidarity.

The paper *Understanding the Role of Future Visions as Infrastructure for Sustainable Living* addresses the need for empirical research on long-term ecological sustainability. Drawing on ethnographic research in a sustainability-oriented community in India, it explores how shared future visions shape everyday practices and support intergenerational change. The study examines how collective imaginaries function as a form of infrastructure, guiding alternative ways of living, and contributes to PD by positioning visions as generative frameworks that sustain ongoing practices.

Overall, the conversation is shaped by an extended view of the notion of infrastructure and infrastructuring as originally conceived by Karasti and Syrjänen [18], and earlier by Star and Ruhleder [26]. The term is associated with PD as an approach to designing for future use beyond the immediate project, while simultaneously creating opportunities for shared decision-making within the design process. A central idea across the papers is the exploration of how collectively constructed visions of the future can operate as an infrastructure supporting community deliberation on sustainable pathways. This articulates a vision of PD as an engaged, situated, and forward-looking practice, capable of shaping not only early-stage processes but also the final phases of policymaking. Supporting communities and policymakers in envisioning, negotiating, and enacting more sustainable futures is a profoundly political act, as politics must reclaim its original function of articulating long-term visions and proposing shared futures. From this perspective, PD reasserts its political role by facilitating contextually grounded deliberation on sustainable futures, operating not merely

as a tool for data collection but as an infrastructure for dialogue and transformative change.

2.6 Post-anthropocentrism and Participation: AI – emerging political implications for PD

The conversation *Post-Anthropocentrism and Participation: AI* examines how PD can contribute to new forms of collective coexistence within a complex landscape where notions of intelligence and participation are continually being redefined. It includes five full papers that reconceptualise AI in more-than-human terms, exploring how technological systems can foster new forms of attunement and collaboration across human, machinic, and ecological relations, while foregrounding their political implications.

In *Designing Responsible AI with Indigenous Communities*, the authors examine three interconnected AI projects co-developed with Ovahimba and San communities in Namibia, focusing on agriculture, cultural heritage, and resilience. Through PD and prototyping, the study shows how transparent and collaborative processes allow community worldviews, aspirations, and Indigenous Knowledge Systems to shape technological development. It argues that responsible AI must be deeply contextual and culturally grounded, aligning with community-defined priorities and sustainability goals. By foregrounding relational and ecocentric perspectives, the paper demonstrates how participatory AI can challenge dominant technological paradigms and foster more equitable and culturally responsive forms of innovation.

The paper *Theatre of the Tech-Oppressed: Exploring Algorithmic Injustice through Participatory Performances* investigates how Theatre of the Oppressed can be mobilised within PD to engage young people in critical reflection on AI systems. Drawing on workshops with 15–17-year-olds, it shows how forum theatre enables participants to embody algorithmic agents and experiment with alternative interventions, making issues of bias, power, and injustice tangible and open to debate. By rendering opaque systems ethically resonant, the approach fosters youth agency and supports forms of knowledge that are situated, affective, and emergent in practice, reflecting design research's call to move from knowing about others to knowing with them.

Among the five papers, these two explicitly address injustice and marginalisation by interrogating who holds power: the first demonstrates how redistributing design agency can challenge exclusion embedded in computational systems, while the second examines data bias, meritocratic assumptions, and algorithmic power through participatory performances with youth. In both cases, power is understood as circulating through infrastructures and relationships, emerging from entanglements between human and non-human actors instead of being anchored in singular authorities. This understanding of power as something that emerges through relations, rather than being possessed by specific actors, resonates with the ongoing expansion of intelligence across humans, other living beings, machines, and physical environments, posing challenges that existing frameworks struggle to fully address. Such conditions demand forms of coexistence that work within incompleteness rather than against it [13, 24]. This introduces specific political implications for PD: politics entails navigating uncertainty and

complexity amid accelerating transformations. Within this landscape, PD moves beyond solutionist paradigms toward a reflexive and ethically grounded engagement with collective life. The conversation foregrounds the idea that PD needs to broaden its conceptual and practical repertoire to support new forms of coexistence in more-than-human worlds, while engaging uncertainty and recognising weakness and imperfection as inherent conditions rather than shortcomings.

2.7 Post-anthropocentrism and Participation: multispecies – towards a multispecies politics of care

The conversation *Post-anthropocentrism and participation: multispecies* features six full papers that examine participatory practices through a more-than-human lens. Faced with increasingly complex and interdependent conditions, design research is moving beyond human-centred paradigms. In such scenario, PD is increasingly rethinking the boundaries of participation, exploring how design processes can involve not only humans but also other species and material actors, and reconsidering how agency is distributed across these relations. Here, the political dimension unfolds as a call for a multispecies politics of care [15], extending responsibility and reciprocity beyond the human and reimagining justice to include the rights and vulnerabilities of diverse species within shared socio-ecological systems.

In the paper *From Control to Co-Evolution: Rethinking Participation in Bio-Inclusive Design*, the authors explore the intersection of PD and living materials, arguing for a shift from human-centred control to bio-inclusive, symbiotic approaches. Through the Terra Sorgente case study involving bacterial cellulose, the paper examines how living matter can be recognized as an active stakeholder in design processes. Framing participation as relational and multispecies, the authors propose a model of co-evolution grounded in care, reversibility, and ecological dialogue, where designers act as facilitators rather than controllers and artifacts are conceived as biodegradable, adaptable, and open-ended systems.

The paper *Infrastructuring and Place – understanding unbounded Design Settings through Place-as-assemblage* examines how contemporary PD unfolds in unbounded and entangled settings shaped by socio-material relations among human and nonhuman actors. It reconceptualizes “place” as an assemblage with its own agentic capacities and, in doing so, it argues that design settings are not neutral backdrops but active participants that shape and are shaped by design processes, offering a deeper understanding of relationality and agency in PD.

The paper *Where wombats dominate and humans accommodate: Recasting design as situated response-ability in more-than-human worlds* reports on a long-term PD study at an Australian wombat sanctuary addressing the threat of extinction caused by disease. Through situated interventions and iterative prototyping, it explores how PD can engage multispecies relations in practice, reframing design as stewardship grounded in care, reciprocity, and response-ability. The study expands participation beyond human-centred and linguistic models, highlighting the ethical and political challenges of designing for multispecies coexistence.

Through diverse case studies, the six papers mark a decisive shift for PD, calling it to move beyond human-centred paradigms towards the mentioned multispecies politics of care [15], an orientation committed to cultivating equitable and regenerative futures by embedding responsibility, attentiveness, and reciprocity in how worlds are collectively inhabited. They advocate recognising nonhumans as political actors within what Stengers describes as a “cosmopolitical space” [27], in which heterogeneous practices, knowledges, and beings coexist, and where diplomatic forms of engagement are required to resist the imposition of a single, universalised worldview.

3 Conclusion

We opened this paper by arguing that PD must reflect on its political foundations. In today’s conflict-ridden global landscape, this entails a renewed commitment. The full papers offer diverse articulations of this political stance: drawing on these contributions, we speculate on the commitments PD must actively embrace to deepen the ongoing inquiry into how participatory processes can advance peacebuilding, social justice, and transformative change. The political commitments that follow are articulated as assertive statements; rather than prescriptive, they are intended as speculative propositions that take a clear political stance. We are aware that these commitments are neither new nor original, and that each is supported by an extensive body of literature beyond the papers examined here. Yet we believe that articulating them together and situating them within the present historical conjuncture is both timely and significant. Each concept is presented below with its title and a brief description.

- *Beyond neutrality*: PD should not be conceived as a neutral toolbox; it must be understood as a conscious and rigorous political practice rooted in ethical responsibility.
- *Resisting instrumentalisation*: PD should be understood as a deeply political practice that engages questions of power, positionality, and the ethics of intervention, moving beyond procedural and instrumental interpretations of participation.
- *Re-politicising the designer’s role*: far from impartial facilitators, designers should operate as positioned agents within fields of power, where their design choices such as those concerning time, language, formats and other dimensions structure the very conditions of participation and shape its outcomes.
- *Engaging larger scales*: issues such as peace, social injustice, and climate change demand a shift in scale, requiring PD to move beyond small-scale interventions toward deeper systemic engagement.
- *Embracing longer temporalities*: participation demands a long-term political commitment, as inclusion, agency, and recognition emerge not from episodic interventions but from sustained relational practices and participatory infrastructures that move beyond short-term, solutionist logics.
- *Envisioning plural futures*: PD should affirm its political role as forward-looking practice that enables communities and institutions to collectively imagine, negotiate, and enact diverse and sustainable futures.

- *Cultivating multispecies politics*: PD should extend its concern beyond exclusively human actors, recognising nonhuman and multispecies actors as political subjects and affirming their agency as a normative commitment.
- *Navigating complexity and incompleteness*: PD should cultivate not-knowing as a methodological and political orientation, working with uncertainty and treating weakness and imperfection as constitutive conditions rather than failures.

We recognise that, despite its substantial contributions and influential projects, PD continues to occupy a relatively marginal position. Yet, at a time marked by war and escalating conflicts, the question of peace becomes unavoidable. With this in mind, we conclude with a recent reflection by Ehn [9]: “so, my suggestion is not that Participatory Design could or should play a role in summit meetings, but, in the spirit of Participatory Design theory and practice, to find a new long-term orientation towards local peace-making engagements. I do not know if this is yet another Utopian dream, and it is certainly not to replace democratic design experiments, decolonial, more-than-human, and climate design activism, but maybe to make them possible.”

4 AI use

Chat GPT 5.2 and DeepL were used to proofread, streamline text and format the citations and references.

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Weaving Peace in a World of Conflict: Conversations about Participatory Design

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Abstract

This *Conflicts and Participation* PDC 2026 Conversation examines how global systems intersect with local experiences in contexts of deepening polarization, nationalism, and digital conflict. The collection of papers positions participatory design not as a tool for eliminating conflict through technical solutions, but as a critical practice for transforming antagonism into agonism, where diverse perspectives can coexist and be productively negotiated. Drawing on agonistic political theory, decolonial design, and feminist epistemologies, the papers address conflict across multiple scales, from settler colonialism and Indigenous knowledge erasure to diaspora polarization and youth marginalization within health justice movements. Each contribution demonstrates how participatory design can serve as a site of resistance, negotiation, and transformation by centering marginalized voices, redistributing epistemic authority, and designing for pluriversal futures. Building on the *Design for Peace Ecosystems* initiative, the Conversation foregrounds principles of relational accountability, trauma-informed practice, and long-term engagement, refusing quick fixes in favor of sustained processes that honor local knowledge and cultural practices as tools for fostering coexistence and positive peace.

CCS Concepts

• **Human-centered computing** → Collaborative and social computing; Collaborative and social computing theory, concepts and paradigms; Human computer interaction (HCI); HCI theory, concepts and models; • **Social and professional topics** → Professional topics; Computing education.

Keywords

Participatory Design, Conflict, Design for Peace, Pluriversal Design

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1 Introduction

This *Participatory Design Conference (PDC) 2026* Conversation has been centred on *Conflicts and Participation*. In the call, authors were asked to “explore the interplay between global systems and local experiences, with a critical lens on how globalization impacts peacebuilding efforts and fosters resistance and/or cooperation at a local level.” It was followed by the acknowledgement that “Participatory design can contribute to conflict resolution, emphasising the importance of inclusive strategies that honour local knowledge and cultural practices as tools for fostering coexistence.” In an era marked by deepening polarization, resurgent nationalism, and the amplification of conflict through digital platforms, the urgent question facing design practitioners and scholars is not whether design can contribute to peace, but how. As global crises, ranging from climate displacement to algorithmic misinformation, intersect with localised struggles for justice, dignity, and survival, participatory design emerges as both a difficult practice and a vital methodology for navigating the tensions between universalising systems and situated experiences. This collection of papers, presented at PDC 2026 under the theme “Peace, Dialogue, Coexistence,” explores the interplay between global systems and local experiences through a critical lens on how globalization shapes efforts to build peace ecosystems and fosters resistance and cooperation at the local level. The papers collectively argue that participatory design can contribute to conflict resolution by emphasising inclusive strategies that honour local knowledge and cultural practices as tools for fostering coexistence.

The relationship between design and conflict is neither new nor simple. Design has historically served as an instrument of both oppression and liberation: from colonial cartographies that erased Indigenous territories to community-led spatial interventions that reclaim public space [2]. What distinguishes contemporary participatory design practice, however, is its explicit engagement with

conflict not as an aberration to be resolved through technical solutions, but as a constitutive dimension of social life that demands relational, epistemic, and political engagement [7, 11]. As Chantal Mouffe's *agonistic political theory* suggests, the goal of democratic practice is not to eliminate conflict but to transform *antagonism*, where the other is seen as an enemy to be destroyed, into *agonism*, where the other is recognised as an adversary whose position must be engaged [7, 11]. This theoretical reframing positions participatory design as a critical practice for creating the conditions under which diverse and often conflicting perspectives can coexist and be productively negotiated.

The papers in this PDC 2026 Conversation address conflict across multiple scales and contexts: from the enduring violence of settler colonialism and the erasure of Indigenous knowledge systems [12], to the polarization of diaspora communities navigating intergenerational trauma and misinformation [3], to the structural inequities that marginalize youth voices in health justice movements [7, 11]. Each paper demonstrates how global forces, whether through colonial legacies, neoliberal governance, or technological infrastructures, produce and exacerbate local conflicts, while simultaneously showing how participatory design methodologies can serve as sites of resistance, negotiation, and transformation. Together, these works challenge the notion of design as a neutral or purely instrumental practice, instead framing it as a profoundly political endeavour that must grapple with *power*, *positionality*, and the *ethics of intervention* [2, 9].

The Conversation's focus on *Conflicts and Participation* builds upon the growing recognition within the design community that peacebuilding cannot be imposed from above or designed through *universal templates* [2, 4, 5]. Instead, sustainable peace emerges from processes that are culturally grounded, relationally accountable, and attentive to power asymmetries. This insight resonates with broader scholarship on decolonial design [2, 12], feminist epistemologies [3, 9], and critical participatory action research [5], all of which emphasise the importance of centering marginalized voices, redistributing epistemic authority, and designing for pluriversal futures, that is, "a world where many worlds fit" [2]. In this light, participatory design is not merely a method for gathering user input but a radical practice of world-making that challenges dominant ontologies and opens space for alternative ways of knowing, being, and relating.

The conceptual origins of the Conversation can be traced to the *Design for Peace Ecosystems* project (<https://designforpeace.net/>), which began in 2023 seeking to build international networks of practitioners, scholars, and activists committed to using design as a tool for *positive peace*, defined not as the mere absence of violence but as the presence of justice, equity, and structural transformation [6]. This initiative recognises that design interventions in conflict contexts must navigate complex ethical terrain, including the risk of extractive research practices, the perpetuation of colonial power dynamics, and the potential for well-intentioned interventions to cause harm. As such, the papers in this PDC *Conflicts and Participation* Conversation foreground principles of relational accountability, trauma-informed practice, and long-term engagement, refusing quick fixes in favour of sustained, transformative processes.

Central to this collection is the concept of the "*cultural interface*," a term coined by Indigenous Australian scholar Martin Nakata to describe the contested space where Indigenous and non-Indigenous knowledge systems meet [12]. Rather than viewing this space as a site of inevitable clash or assimilation, Nakata frames it as a complex, dynamic zone of negotiation where multiple epistemologies can coexist and mutually transform. This framing proves particularly generative for participatory design practice, offering an alternative to both the colonial impulse to subsume difference within dominant frameworks and the well-meaning but often superficial gestures toward "inclusion" that leave power structures intact. The cultural interface, as deployed across several papers in this collection, serves as a methodological and ethical compass for navigating difference, honouring Indigenous protocols, and creating space for genuine epistemic pluralism.

Equally important is the concept of "*agonistic design*," which draws on Mouffe's political philosophy to reframe participation not as consensus-building but as the creation of infrastructures for productive disagreement [7, 11]. In agonistic design, the goal is not to eliminate difference or arrive at a singular solution, but to design processes and spaces where conflicting perspectives can be held in tension, power can be contested, and marginalized voices can gain epistemic authority to challenge dominant narratives. This approach acknowledges that in contexts of structural inequality, whether in healthcare systems that marginalize youth, heritage projects that privilege Western frameworks, or carceral systems that deny dignity, meaningful participation requires not just a seat at the table but a fundamental redistribution of who gets to define the terms of engagement.

A third conceptual anchor running through these papers are "*ethics of care*," understood not as a soft or apolitical gesture but as a rigorous political practice [3, 9]. Drawing on feminist scholarship, particularly the work of Joan Tronto [16], Nancy Fraser [3], and Maria Puig de la Bellacasa [14], several contributors argue that care must be understood as both a set of embodied practices, listening, attending, responding, and a critique of systems that devalue reproductive labor, emotional work, and relational maintenance [3]. In the context of participatory design for conflict transformation, an ethic of care demands attention to trauma, recognition of vulnerability, and a commitment to processes that do not extract knowledge or labour from already marginalized communities. It also requires designers to engage in ongoing reflexive practice, interrogating their own complicity in systems of oppression and remaining accountable to the communities with whom they work.

The *narrative structure of conflict* itself emerges as a critical site of inquiry across the papers. As Emily Prokop argues in "The Story Behind," the stories we tell about ourselves, our communities, and our histories are not neutral accounts but active constructions that shape identity, belonging, and possibility [13]. In contexts of conflict, whether intergenerational trauma within diaspora communities, contested narratives of national identity, or the silencing of Indigenous histories, whose stories get told, by whom, and through what means becomes a matter of profound political consequence. Participatory design interventions that centre storytelling, memory work, and narrative sovereignty thus become not merely therapeutic exercises but acts of epistemic resistance that challenge hegemonic narratives and open space for alternative futures.

The *materiality of participation* also receives sustained attention throughout the collection. Participatory design is not an abstract or purely discursive practice but one that unfolds through concrete materials, spaces, and infrastructures [1, 15]. From the chalk drawings of the Hopscotch project to the digital tools designed to protect protest movements from state surveillance, from the podcasts that carry ancestral knowledge to the workshops that facilitate intergenerational dialogue, the papers demonstrate how materials and technologies mediate, and sometimes constrain, the possibilities for participation. This attention to materiality extends beyond the immediate artefacts of design to encompass the broader infrastructures, legal, economic, and technological, within which participatory processes are embedded and which they must navigate or contest.

A persistent tension animating these papers is the question of scale: how can participatory design processes, which are inherently local, particular, and time-intensive, respond to global crises that demand urgent, large-scale intervention? This tension between the intimate work of building trust within a specific community and the systemic transformations required to address structural violence appears repeatedly across contexts. Some contributors argue for a shift from “projects” to “infrastructuring”, that is, from time-bound interventions to the cultivation of enduring relational capacities and institutional arrangements that can sustain transformative work over time [1, 15]. Others emphasise the prefigurative dimension of participatory design: the idea that the process itself must embody the values and relations of the future world being designed toward, rather than deferring justice to some distant horizon.

The papers also grapple with *profound ethical paradoxes* inherent in design work in conflict zones. How does one design for hope within carceral systems without legitimising those systems? How can researchers facilitate dialogue across polarized communities without instrumentalising trauma? When is participation genuine empowerment, and when is it merely a performance of inclusion that leaves power structures intact? These questions resist easy answers, and the contributors’ willingness to sit with discomfort, ambiguity, and complicity marks a maturation of the field beyond techno-solutionist optimism toward a more nuanced, critical, and humble practice.

Methodologically, the papers showcase a diverse array of approaches, from Community-Based Participatory Design (CBPD) workshops that centre intergenerational storytelling, to Facilitative Listening Design (FLD) that sustains rather than resolves tension, to the use of speculative and playful methods like Hopscotch that invite experimentation and imagination. What unites these varied approaches is a commitment to process over product, to relationships over deliverables, and to transformation over extraction. Many contributors explicitly reject the notion of the designer as expert or hero, instead positioning themselves as facilitators, witnesses, or co-learners within processes that are ultimately owned and directed by communities themselves.

The *role of technology* in mediating conflict and participation receives particular scrutiny. Several papers examine how digital platforms and algorithmic systems amplify misinformation, enable state repression, and concentrate power, thereby exacerbating conflict. At the same time, contributors explore how technologies

can be designed to support democratic contestation, protect vulnerable communities, and create spaces for dialogue that might not otherwise exist. This dual character of technology, as both an instrument of control and a tool of liberation, demands critical vigilance and careful attention to questions of governance, ownership, and accessibility.

Geography and place emerge as critical dimensions of conflict and participation throughout the collection. The papers span diverse geographical contexts, from Indigenous communities in Australia to the Vietnamese diaspora in the United States, from youth movements in India to post-conflict communities in Indonesia, and from Japanese ageing communities to Afro-Colombian territories. This geographical diversity is not incidental but constitutive of the collection’s argument: that there can be no universal template for participatory design in conflict contexts, only situated practices that are responsive to specific histories, ecologies, and relations. At the same time, the papers demonstrate how local conflicts are never purely local but are always entangled with global systems of power, capital, and knowledge production.

The *temporal dimension of conflict* transformation also receives sustained attention. Against the neoliberal demand for rapid results and measurable outcomes, many contributors insist on the necessity of slow, iterative, multi-generational processes. Healing from trauma, rebuilding trust, and transforming entrenched power structures cannot be rushed or condensed into project timelines determined by funding cycles. This temporal commitment requires alternative institutional arrangements, funding models, and measures of success that privilege long-term relational accountability over short-term deliverables. It also requires patience, humility, and a willingness to stay with difficulty even when progress is not immediately visible.

Language and translation emerge as both practical challenges and sites of political contestation. When Indigenous knowledge systems operate through oral traditions, embodied practices, and relational ontologies that resist capture in written academic discourse, how can participatory design honour these epistemologies without instrumentalising or distorting them? When diaspora communities navigate multiple linguistic worlds and when translation itself becomes a site of cultural negotiation and potential loss, how can design processes attend to these nuances? Several papers grapple with these questions, exploring strategies ranging from the use of mother tongues and untranslated terms to the creation of hybrid communicative practices that acknowledge incommensurability rather than smoothing over difference.

The collection also surfaces questions about *who counts as a participant* and what forms of participation are valued. Traditional participatory design has often privileged vocal, articulate engagement in formal workshop settings—modes of participation that may exclude those who are differently abled, traumatised, or culturally oriented toward other forms of communication. Several papers explore alternative modes of participation, from embodied and sensory engagement to silence and refusal, recognising that sometimes the most politically significant act is the choice not to participate in processes that are extractive or disempowering.

The papers collectively push against instrumentalist understandings of participatory design that would reduce it to a set of tools or techniques to be applied mechanically across contexts. Instead,

they argue for participatory design as a disposition, an orientation, or what some contributors call a “stance” characterised by epistemic humility, relational accountability, and political commitment. This shift from method to stance has profound implications: it means that participatory design cannot be taught through protocol alone but must be cultivated through ongoing ethical formation, critical reflexivity, and embodied practice.

Finally, the papers in this collection *refuse despair*. In the face of escalating global crises, entrenched systems of oppression, and the apparent intractability of many conflicts, the work presented here insists on the possibility, indeed, the necessity, of hope. But this is not naive optimism or techno-utopian fantasy. Instead, it is what one contributor calls “infrastructural hope”: the patient, collective work of building the material, relational, and institutional conditions for more just futures, even when those futures remain uncertain and partial. It is hope as practice rather than promise, as commitment rather than guarantee.

This introduction provides an overview of the 18 papers, three full papers, and 15 exploratory papers that constitute the *Conflicts and Participation* conversation at PDC 2026. Following this introduction, we present a synthesis of the three full papers, which serve as anchor texts for the conversation, and then a thematic analysis of the fifteen exploratory papers, organised into six cross-cutting themes. We then distil these multiple contributions into three overarching themes that structure the conversation: (1) *Conflict as Catalyst: Politicizing Participation to Challenge Hierarchies*; (2) *Infrastructuring Relations: Designing Dialogic Encounters Across Conflict*; and (3) *Prefiguring Futures: Situated Agency as Participation in Conflict Transformation*. We conclude with reflections on implications for participatory design research, practice, and pedagogy, and suggest directions for future inquiry. Throughout, our aim is not to resolve the tensions and contradictions inherent in this work but to hold them in productive dialogue, honouring the complexity of conflict and the difficult, vital labour of building peace through design.

2 Full Papers

In total, we have three full papers in the PDC 2026 *Conflicts and Participation* Conversation. The first is *Two-way co-design: Learning from the Solid Lines project* (Australia), where Nicola St John draws on Martin Nakata’s [12] concept of “cultural interface” to frame collaboration between Indigenous and non-Indigenous knowledge systems not as a clash, but as a complex, negotiated space where divergent knowledges coexist. St John proposes “two-way co-design” as a methodology rooted in relational accountability, respect for Indigenous protocols, thresholds for knowledge sharing, and centring Indigenous leadership (e.g., in establishing an Indigenous-led illustration agency). She also highlights the importance of reshaping commercial design industry practices by embedding Indigenous Cultural and Intellectual Property (ICIP) and values, moving beyond surface-level inclusion to structural and epistemological change. This paper directly addresses the conflict inherent in settler-colonial contexts and the dominance of Western design paradigms. It explores how PD can serve as a site for negotiating power, redistributing authority, and fostering coexistence by creating a “third space”

(the cultural interface) where global industry systems and local Indigenous knowledge can intersect and transform one another.

The second is *Designing community trust through collective intergenerational memory sharing* (USA), which investigates conflict within the Vietnamese diaspora — specifically, polarized narratives around political identity and history — as exacerbated by global misinformation systems. Nguyễn et al. utilise Community-Based Participatory Design (CBPD) workshops to create safe spaces for intergenerational storytelling and processing of deeply rooted memories related to migration and war. They argue against universal, tech-centric solutions to misinformation, advocating instead for pluriversal approaches that prioritise culturally specific, community-based practices of sense-making and dialogue. This paper examines how global flows of information and historical geopolitical factors contribute to local conflicts within diaspora communities. It positions PD as a tool for peacebuilding and reconciliation, using intergenerational dialogue to honour local knowledge and lived experience, thereby fostering cooperation and trust amid systemic distrust and polarized media.

The third and final is *Participants on participation: Agonistic PD processes and implications for epistemic authority, mutual learning, and participant gains* (India & USA) employs Mouffeian [7, 8] political theory to frame PD as an agonistic space where conflicting perspectives are engaged, not resolved, to build “chains of equivalence” among marginalized groups. Amanda Geppert and Maurizio Teli critically examine what less powerful participants (youth in India and the U.S.) gain from PD processes, emphasising the development of epistemic authority and the prioritisation of their “matters of care.” They propose and refine the Design for Equivalence (DFE) framework, a set of principles to ensure PD challenges structural inequality by deliberately building common ground through mutual learning and privileging the concerns of systematically excluded groups. This paper engages with conflict through the lens of structural inequity and power imbalance in health justice. It explores how PD can facilitate resistance to dominant systems (e.g., impersonal healthcare) by creating infrastructures that empower marginalized voices. It demonstrates how local experiences of exclusion can inform the redesign of broader systems through agonistic, yet collaborative, processes.

The three full papers collectively articulate a core thesis: *participatory design is a vital practice for navigating conflict and fostering coexistence in a globalized world often portrayed in dichotomous terms*, an argument advanced through the creation of negotiated spaces for difference where each paper proposes a specific framework for holding conflicting knowledges in productive dialogue: the cultural interface in *Two-way co-design*, trauma-informed intergenerational workshops in *Designing community trust*, and agonistic chains of equivalence in *Participants on participation*. Collectively, these works honour local knowledge as a catalyst for systemic change by explicitly rejecting universal, top-down solutions and empirically demonstrating how Indigenous protocols can transform commercial design practices, how diasporic memory serves as an antidote to global misinformation, and how youths’ lived experiences can reconfigure health systems. Their common focus lies in *deep relationality and long-term accountability*, framing peacebuilding not as an end state but as a continuous relational practice woven from trust, transparency, and shared responsibility — whether to

Country, community, or co-design partners. Ultimately, all full papers are grounded in a *structural critique of power* and aspire to its radical transformation by redistributing epistemic and practical power from hegemonic global systems (colonial, commercial, medical) to local actors, thereby reconfiguring design beyond its instrumental function so that it emerges as a transformative node for modes of dialogue and as a method of cooperative resistance and re-worldmaking.

3 Exploratory Papers

15 Exploratory Papers were selected for the *Conflicts and Participation Conversation* of PDC26. Following a thematic analysis [17] of these papers, six central sub-themes were identified to interweave across them, revealing both the profound potential and the critical tensions within design as a practice for engaging with conflict.

The first sub-theme is *navigating ethical and political paradoxes*. Surfacing repeatedly, this sub-theme questions the very premises of intervention. *Hope by design* confronts the core paradox of working within carceral systems, while *Protecting protests from institutional repression* examines the tension between creating open democratic infrastructures and exposing participants to risk. Similarly, the authors of *What's on the (tension) radar?* Invite reflection on the compromises made when scaling participatory design's ideals within constrained realities. This sub-theme underscores that PD is never a neutral tool but a political practice entangled with the systems it seeks to engage.

The second sub-theme had a strong focus on *epistemic justice and decolonizing praxis*, in which authors call for designers to fundamentally reorient who counts as knowledgeable. *Designing dialogues* explicitly re-centres Afro-Colombian ancestral knowledge, invoking Audre Lorde's [10] warning that "the master's tools will never dismantle the master's house." The authors of *Reframing participation in ICH* argue for a decentering of Western authority in heritage projects, advocating "pluriversal participation." *Relearn to coexist as the alternative* grounds itself in the indigenous feminist concept of "body-territory," challenging Western binaries. Together, these papers argue that coexistence requires dismantling epistemic hierarchies and honouring plural ways of knowing.

Third, the reconceptualisation of *design as a relational and dialogic infrastructure* shifts the focus from projects to ongoing processes. *Conflict transformation by design* and *Building participatory design competencies for designing dialogue* both frame dialogue and listening as active, designed practices. *Participation through designing relations* and *Hopscotch* further emphasises participation as an embodied condition of "learning-with" others, materials, and place. This shift from "projecting to infrastructuring" (as noted in *Conflict transformation by design*) is seen as essential for sustaining transformation. *Participatory urban conflict mapping* further highlights a shift from project-based interventions to relational, infrastructuring practices in participatory design.

Fourth, the embodied practices of *care, reflection, and attunement* are highlighted as essential methodological imperatives. *Crafting spaces of and for care* positions reflective, care-based engagement as a pathway to coexistence. *Relearn to coexist as the alternative* reconceptualises care, drawing on Fraser's [3] crisis-of-care analysis as a political practice of community strengthening. *Participation*

through designing relations draws on Light & Akama's [9] "politics of care," and *Hopscotch* values caring gestures in its temporary choreographies. This sub-theme asserts that technical processes must be underpinned by an ethic of relational sensitivity and mutual vulnerability. *Conflict transformation by design* introduces Facilitative Listening Design (FLD) as a participatory methodology that structures inquiry as a reflective, care-based practice of listening, holding tension, and nurturing relational transformation through attuned, iterative encounters.

Fifth, a sub-theme of *cultivating agency, ownership, and prefiguration* explores how PD can rehearse alternative futures. *From researcher-led to community-led*, this material and cultural work details the process of transferring ownership to a Japanese ageing community. *Hope by Design* explicitly frames hope as an "infrastructural practice" that prefigures decarceral futures. *When art speaks*, it shows how participatory exhibitions create platforms for collective voice and generate social capital for positive peace. *Participative intimacy* explores affective prefiguration and participative intimacy as means to collectively envision and enact future relational states, thereby rehearsing alternative forms of coexistence through collaborative design. These papers demonstrate the design's role in materialising agency and prototyping coexistence.

Finally, the significance of *cultural, material, and situated specificity* grounds all theories in the local context. *From researcher-led to community-led* described role transitions guided by local norms of *wa* (harmony). *Participation through designing relations* emphasises how space and material act as co-authors. *Hopscotch* treats participation as a situated, impermanent practice like chalk on pavement. This sub-theme resists universal templates, insisting that peacebuilding must be attuned to local rhythms, symbols, and practices.

In summary, these 15 exploratory papers provide a robust and nuanced response to the conference theme of *Participatory Design and Conflict*. They align by critically examining the interplay between global systems and local experiences, demonstrating how participatory design can be a site of both resistance to and negotiation with homogenising forces.

The exploratory papers illustrate how globalised systems — be they punitive carceral models (*Hope by design*), neoliberal privatisation (*Relearn to coexist*), biomedical paradigms (*Designing dialogues*), Western-centric heritage frameworks (*Reframing participation in ICH*), or digital repression (*Protecting protests*) — create and exacerbate local conflicts. In response, the authors position PD not as a tool for imposing external solutions, but as a *practice of mediation and translation* that honours local knowledge as the primary tool for fostering cooperation. It is evident in the centring of Afro-Colombian ancestral knowledge (*Designing dialogues*), indigenous body-territory ontologies (*Relearn to coexist*), and local Japanese communal norms (*From researcher-led to community-led*).

The critical lens called for by the authors is embodied in the pervasive questioning of PD's own complicities — its potential to legitimise oppressive systems (*Hope by design*) or dilute its political ethos in pursuit of scale (*What's on the (tension) radar?*). The authors advocate for a *reflexive, agonistic, and pluriversal practice* that, drawing on scholars such as Arturo Escobar [2] (*Crafting spaces of and for care*), challenges dominant metastructures. They frame conflict not as a problem to be solved, but as a condition to be engaged

through designed spaces of listening (*Conflict transformation by design*), dialogue (*Building participatory design competencies*), and play (*Participation through designing relations & Hopscotch*).

Ultimately, the exploratory papers converge on a vision of PD as a *critical, caring, and infrastructuring practice*. A practice that fosters coexistence by building relational capacities, protecting spaces for dissent, and prefiguring more just relationships, thereby offering a vital means to navigate the tensions between global systems and local lived experiences of conflict.

4 Discussion

This collection of research is based on a fundamental premise: understanding conflict not as an anomaly to be suppressed, but as a constitutive and dynamic dimension of the social sphere. It is from this definition, which acknowledges the plurality of interests, values, and needs at play, that PD emerges as a vital relational practice for navigating the profound conflicts of our time. In an increasingly polarized world, where multiple levels of conflict — from the geopolitical to the community level — are in a state of agitation, the papers collectively argue that peace and coexistence do not arise from the elimination of differences, but through the difficult yet beautiful work of engaging with them in a sustained and structured manner. PD offers precisely that framework: a set of practical and ethical foundations from which diverse communities can confront, transform, and inhabit their conflicts. The contributions converge around three overarching concepts (Fig. 1) that outline this approach:

First, PD is an act of *decolonial epistemic justice*, a deliberate and necessary rebalancing of the world's knowledge systems. The papers reveal how globalised frameworks, often centred on the West as the basis for valid knowledge, creation, design, heritage, and healthcare, have marginalized other forms of knowing — such as Indigenous, ancestral, and local knowledges — sowing conflict and erasure. In response, PD stands as a decolonial practice that does not seek to nullify the established nor highlight a single viewpoint — which could lead to a static, museum-like interpretation devoid of dialogue — but rather to create what Nakata [12] calls a “cultural interface.” Here, as evidenced in collaborations with diverse communities, design transforms into a genuine dialogue among equals. It is a process that protects Indigenous Cultural and Intellectual Property (ICIP), centres relational concepts such as “body-territory,” and employs tools like communal podcasts to honour oral histories, all while fostering active and reciprocal exchange. Thus, PD moves beyond mere inclusion within a dominant system to aspire to the pluriversal coexistence of many worlds, fostering peace through the restoration of narrative sovereignty and cultural continuity. From this emerges a conversation in PDC2026 under the theme of *Conflict as catalyst: Politicizing participation to challenge hierarchies*. This conversation has *Two-way co-design* as its keynote/ full paper, with *Participatory urban conflict mapping*, *Reframing participation in ICH*, *Designing dialogues*, *Protecting protests*, and *What's on the (tension) radar?* as exploratory papers.

Second, *PD builds relational infrastructures for agonistic dialogue*, in which conflict is transformed rather than silenced. Drawing on the political theory of Chantal Mouffe [7, 8], several papers reframe the purpose of PD. The goal is not to resolve differences,

nor to reduce the process to the mere generation of self-referential methodologies, but to design the conditions so that these differences can be addressed constructively, building “chains of equivalence” among marginalized groups. The core issue here is not the method itself, but the transformative impact and reach this process can generate in communities in conflict. It might involve creating open digital tools to protect protests from state repression or employing Facilitative Listening Design (FLD) to sustain tension in post-conflict communities. These are not one-off projects but relational infrastructures: enduring spaces for storytelling, intergenerational healing, and collective messaging, as seen in Vietnamese diaspora workshops or Indonesian participatory exhibitions. By prioritising listening and safeguarding democratic contestation, PD nurtures the fragile ecosystems of trust necessary for long-term coexistence amidst irreconcilable histories, demonstrating that its value lies in the lasting effects it sows in the social fabric. From this emerges a conversation theme on *Infrastructuring relations: Designing dialogic encounters across conflict*. This conversation has *Designing community trust* as its keynote / full paper, with *Participative intimacy*, *Crafting spaces of and for care*, *Conflict transformation by design*, *Relearn to coexist*, and *Building participatory design competencies* as exploratory papers.

Finally, PD is grounded in a *critical ethic of care and prefiguration*, demanding that we design for both the present and the future we wish to see. The authors confront the inherent tensions of intervening in conflicted spaces. How does one practice trauma-informed co-design in a prison, offering dignity and hope, without legitimising the carceral system? The answer lies in a dual responsibility: to alleviate immediate harm through deep relational care, while simultaneously “rehearsing” restorative futures. This ethic permeates the papers, from cultivating reflective practice among designers to embracing playful, speculative methods such as *Hopscotch*. More than a transient methodology or a trend, it represents the transformation of design into a process of deep social meaning, one that seeks high transformative impact over its own methodological ritual. It calls for a radical shift: nurturing relational qualities — such as solidarity, conviviality, and dialogicity — that can reconfigure social foundations. Ultimately, this body of work proposes that PD contributes to peace by honouring the local, materialising dialogue, and courageously prefiguring, through its process, a more just and pluralistic world. From this emerges the conversation titled *Prefiguring futures: Situated agency as participation in conflict transformation*. This conversation has *Participants on participation* as its full paper/keynote, with *Hope by design*, *From researcher-led to community-led*, *When art speaks*, *Participation through designing relations*, and *Hopscotch* as exploratory papers.

5 Conclusion

In conclusion, this discussion synthesises a pivotal shift in understanding PD as an essential practice for engaging with, rather than suppressing, social conflict. It positions PD not as a technical problem-solving tool, but as a profound relational, ethical and political framework for navigating our polarized world. The collective research converges on three core contributions that define this approach: *PD as Epistemic Justice*, acting as a decolonial practice that challenges hierarchical knowledge systems, creating



Figure 1: Conflicts and Participation Conversations listing Full and Exploratory Papers. Diagram by Authors.

”cultural interfaces” for pluriversal coexistence and restoring narrative sovereignty. *PD as Relational Infrastructure*, where it builds enduring spaces for agonistic dialogue, transforming conflict by designing conditions for constructive engagement and fostering trust amidst irreconcilable differences. And finally, *PD as Critical Care and Prefiguration*, grounded in ethics that address immediate harm while simultaneously rehearsing and materialising more just, restorative futures through the design process itself.

Ultimately, the *Conflicts and Participation* Conversation at PDC 2026 argues that PD’s most significant value lies in its in this integrated practice and capacity to honour locality, materialise dialogue, and courageously prefigure - through its very practice - the foundations for a more pluralistic and peaceful coexistence. Peace itself emerges not from consensus, but from this courageous, ongoing work of designing how we coexist.

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Two-Way Co-Design: Learnings from the Solid Lines project

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Abstract

This paper explores ‘two-way’ co-design as a relational methodology for navigating collaborative exchanges between Indigenous and non-Indigenous knowledge systems. Drawing from two-way educational approaches developed with First Nations communities in Australia to support First Nations knowledges within the classroom, it frames co-design as an ongoing practice of epistemic attentiveness and relational accountability, particularly at moments of encounter. Two-way co-design is articulated through a participatory design research project focused on establishing a First Nations-led illustration agency in Australia. The project was developed as a collaboration between ten First Nations artists, a commercial creative agency as industry partner, and a non-Indigenous co-design researcher (the author). Responding to the systemic underrepresentation of First Nations creatives in Australia’s design industries, the research explored how collaboration might unfold between industry and Indigenous knowledges. Through workshops and sustained asynchronous dialogues, cultural protocols, commercial practices, and lived experiences were brought into relation. Drawing on reflections and relational experiences, I argue how two-way co-design foregrounds an awareness of knowledge thresholds and invites designers to remain attentive and accountable at moments where knowledge systems meet, interact, or diverge. In doing so, it challenges dominant assumptions about what forms of knowledge are transferable or open to exchange within design practice and contributes guidance on how to navigate tensions between reciprocity and participation within plural, intercultural and decolonial research. The paper offers practice-based insights for working across difference in ways that uphold epistemic plurality and resist the instrumentalisation of Indigenous knowledges within dominant design discourse.

CCS Concepts

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

Keywords

Co-design, Two-way, Knowledge systems, Reciprocity, Dialogue, Plural

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1 Respecting co-design across difference

Sharing knowledge is a fundamental component of co-design, enabling collaboration, mutual learning, and the co-creation of meaningful outcomes. When working with Indigenous peoples and communities, these underlying assumptions require careful attentiveness and must be balanced with the need to respect cultural protocols and thresholds to knowing. Indigenous knowledges are often relational, situated, and carried within specific cultural and community responsibilities, meaning not all knowledges are intended for open exchange. This creates a productive tension within co-design practice. For non-Indigenous co-designers, respecting these thresholds in practice requires deep listening, patience, and ways of co-creating that do not demand full access but uphold the integrity of what is shared, when, how, and by whom. To resist extractive tendencies that presumes knowledge must be visible, actionable, useable or transferable, or as a resource for innovation, particularly within interactions which can be carefully framed through the language of reciprocity and mutual exchange. Building on discourses that critique dominant assumptions about what constitutes ‘participation’, ‘design’ and ‘knowledge’ [1–4] this paper considers the methodological tensions in how non-Indigenous design researchers might respectfully negotiate and co-design across divergent knowledge systems.

Engaging with Indigenous onto-epistemes necessitates acknowledging my position as a colonial settler within the lands now called Australia (see [5, 6]). This locatedness follows feminist and Indigenous scholarship that resists the neutral perspective that comes from both everywhere and nowhere, foregrounding that what we do and come to know is constituted by time, place, relation, and responsibility [7, 8]. By naming where we speak from, we make visible the standpoint from which we relate to and engage with many knowledge systems [9]. My standpoint is shaped by my Irish and English settler family history, including five generations of public-school teachers, by growing up among resourceful and creative women, and my previous experience in non-profit and social enterprise development, and the privileges afforded through my current ongoing role within a university design school [6]. This informs my interest in the complexities of Australian design narratives, and continued questioning of what we are taught, whose voices are included, and how our national identity is represented [10]. I therefore approach the work as a committed participant, one who brings my own capabilities (e.g., access to funding and ethics

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processes, facilitation, publishing and industry networks) when invited and appropriate, rather than as default drivers of processes or methods [11–13]. Engaging in co-design with First Nations peoples requires a continual questioning of what I can know and how I research, teach, and learn in relation to multiple knowledges and truths. In asking how my contributions can be useful, what my responsibilities are in lessening the often invisible and exhausting cultural load placed on many First Nations peoples, and working within dominant practices to cultivate the conditions for many ways of designing, researching, and co-creating to emerge.

This paper articulates a two-way orientation to co-design research when working and collaborating across knowledge systems. Originating in Indigenous educational and community contexts across Australia, two-way approaches began as a way for classroom learning to be rooted in mutual respect and relational accountability across knowledge systems [14, 19]. Two-way co-design acknowledges the distinctiveness of Indigenous and non-Indigenous knowledges and ways of working and seeks to create space for mutual learning and shared action. Rather than seeking to fully ‘know’ or ‘understand’, a two-way approach acknowledges and values epistemic plurality from the outset. Two-way co-design operates within what Torres Strait Islander scholar Martin Nakata describes as the cultural interface—a dynamic and contested space where Indigenous and Western knowledge systems meet and continually negotiate meaning, power, and understanding [20]. Within this interface, designers and researchers learn to creatively tussle with the constancy of plural standpoints, recognizing that multiple worldviews already coexist within co-design projects [15]. This requires an attentiveness to both the possibilities and limitations of collaboration when working across knowledge systems, rather than situating Indigenous and non-Indigenous as oppositional positions. Foregrounded is the coexistence of multiple worlds and ways of knowing to embrace a diversity of onto-epistemologies that are continually adapting, transforming, balancing and negotiating. Two-way co-design presents a contextual and situated practice shaped where knowledge systems are recognized as distinct, yet can intersect, from moments where divergent streams flow into calm pools, or where powerful currents collide.

A two-way co-design approach is grounded within practice through the Solid Lines project—a participatory research initiative that brought together First Nations creatives, The Jacky Winter Group (a commercial creative agency), and myself (a co-design researcher) to envision and co-develop an Indigenous-led illustration agency (see www.solidlines.agency). The project emerged in response to the systemic underrepresentation of First Nations creatives within Australia’s design and commercial art industries, and the need for culturally safe structures that support recognition, access, and self-determination. Working at the confluence of Indigenous knowledges systems, priorities, lived experiences, and dominant commercial logics, while remaining accountable to my own onto-epistemic position, surfaced tensions that required ongoing negotiation, and opened generative spaces for rethinking how knowledge systems can meet. Two-way co-design required an attentiveness to how responsibility is shared, and how colonial hierarchies embedded within industry practice might be unsettled [5]. While grounded within an Australian context, the approach resonates with related practices in other settler-colonial contexts

that seek to hold multiple knowledge systems in dialogue. Mi’kmaq Elder Albert Marshall’s concept of *Two-Eyed Seeing* in Canada [17] and Bolivian Aymara scholar Silvia Rivera Cusicanqui’s *ch’ixi epistemology* [18] similarly foreground coexistence and reciprocity across divergent ontologies. By tracing my experiences of how a two-way practice unfolded, this paper contributes to ongoing efforts to reconfigure co-design as a reflexive and relational practice that honors plurality, sovereignty, and autonomy alongside collaboration. Argued here, is how two-way co-design can surface the tensions and transformative shifts that shape how we work together across difference.

2 A two-way approach

Two-way approaches emerged in the 1980s in the lands now known as Australia, as a strategy to bring Indigenous and Western knowledge systems together within colonial education systems [19–21]. Importantly not only the term ‘two-way schooling’, but the concept itself was developed from First Nations community initiatives, rather than institutional pedagogy [22]. Non-Indigenous education scholar Stephen Harris later used the term to describe practices of drawing on two separate domains of knowledge and is often referenced in relation to this approach. Yet Harris’ understanding, that these domains (Indigenous and Non-Indigenous) should be kept separate, in order to retain their integrity, has been criticized by First Nations scholars, who argue that these domains cannot exist entirely separately and that it is healthy for aspects of each domain to contribute to the other [23]. Two-way pedagogical approaches emphasize that First Nations identities, worldviews, and knowledges must remain strong and central, serving as the basis for navigating and participating in Western contexts. Two-way learning became a way for First Nations people to maintain sovereignty while gaining access to systems historically shaped by colonization and became a model of teaching and learning that proposes First Nations people can operate in both domains. First Nations educators continue to emphasize the importance of First Nations ownership and control over the development of a culturally appropriate pedagogy and curriculum, and the importance of expressing ideas and concepts in specific local culturally-based ways [24].

Two-way pedagogical approaches have widened to include a ‘both-ways’ approach (See Figure 1), with many authors using both terms to refer to the same meaning [25]. The ‘both ways’ approach was developed and articulated by First Nations teacher trainees, most significantly Mandawuy Yunupingu and Nalwarri Ngurruwutthun, Yolŋu educators from Yirrkala [23]. Through the *Gänma* metaphor—the meeting of saltwater and freshwater in a lagoon—Yunupingu described a philosophy of two knowledges flowing together to create new currents of understanding [26]. These flowing metaphors demonstrate how First Nations peoples have long worked at the boundaries between worlds, developing norms of regenerative exchange while protecting the integrity of both [14, 25]. For many First Nations peoples, two-ways/both-ways pedagogical approaches signal a partnership discourse, a neutral ‘third space’ where the two primary cultures of Australia meet and can learn from each other [25]. This third space has been described as a ‘zone where land and sea meet’ or where Indigenous and non-Indigenous approaches can meet to ‘create its own either/or/both



Figure 1: Both-Ways pedagogical approach. From: Ober, R. (2009). Both-Ways: Learning from Yesterday, Celebrating Today, Strengthening Tomorrow. *The Australian Journal of Indigenous Education*, 38(S1), 34–39.

identity’ [25]. In this sense, two-way or both-ways pedagogies move beyond binary notions of Indigenous/non-Indigenous, or bilingual/bicultural education toward more relational epistemologies [14].

Pioneering Torres Strait Islander Academic Professor Martin Nakata uses the term ‘cultural interface’ to refer to the space where Western and Indigenous knowledge systems meet and interact (See Figure 2). Nakata [16] characterizes this space as complex and contested, where Indigenous and Western knowledge systems continually reconfigure meaning, power, and understanding. He reminds us that this space is not simply oppositional but entangled—fluid, ambiguous, and constituted by ‘how we all come to look at the world, how we come to know and understand our changing realities in the everyday, and how and what knowledge we operationalize in our daily lives.’ [16 p.12]. He further calls for ‘consideration of a different conceptualization of the cross-cultural space, not as a clash of opposites and differences but as a layered and very complex entanglement of concepts, theories and sets of meanings of a knowledge system’ [16]. In contrast to abstracted and authoritative forms of knowledge built upon empirical observation and claims of objective neutrality, the cultural interface foregrounds knowledges performed through active, intimate, hands-on participation and personal connection. Nakata reminds us that the cultural interface is necessarily ambiguous and contradictory, because Indigenous standpoints are themselves plural, rooted in lived experiences that also intersect with Western and colonial contexts. For non-Indigenous researchers, this interface is equally a space of unlearning, where assumptions can be unsettled and new understandings given primacy. The cultural interface can be best understood as the site of daily negotiations, frustrations, and tensions that are the lived realities of colonized people subjected to the dominance of epistemes that are outside of their own frames of reference [27]. This requires an attentiveness to plural standpoints and an ongoing tussle of daily negotiation.

When Indigenous and non-Indigenous knowledge systems meet, they operate from fundamentally different foundations, each with its own rules, values, and relational structures. Aboriginal education researchers Tyson Yunkaporta and Sue McGinty describe how knowledge work at this boundary demands translation and mediation (see Figure 3). The challenge, as Yunkaporta and McGinty argue, is not to collapse these differences but to design modes of exchange that mediate across boundaries while preserving the integrity of each system [28]. Yunkaporta reminds us Indigenous peoples have long lived and worked at the boundary between their worlds and the worlds of others, developing ‘norms of regenerative exchange while protecting the identity and integrity of all involved’ [28]. Through this deep history of cross-cultural engagement, Indigenous communities have refined collective, systemic, and design processes that maintain and preserve knowledge across boundaries while enabling adaptation and renewal. The junction of rivers becomes a metaphor for this dynamic process: a site where distinct streams of knowledge meet, mix, and flow together without losing their origins. In this sense, two-way co-design can be understood as a lived methodology that enacts these principles—translating the deep insights of the cultural interface into tangible, relational design practices that mediate between knowledge systems through dialogue, exchange, and co-learning.

3 Exploring knowledge sharing and respecting thresholds in co-design

Scholars aligned with decolonial and pluriversal dialogues within co-design advocate for respecting Indigenous ontologies within participatory design processes, aiming to foreground cultural pluralism and support the autonomy of non-Western knowledge systems [29, 30]. By doing so, they promote pluriversality, fostering a space where diverse worldviews and design lineages can be recognized and celebrated [31]. Decolonial design discourse also cautions against the risk of overlooking designerly methods, particularly within participatory design [2, 4], raising awareness of unconscious



Figure 2: The Cultural Interface. From: Nakata, M. (2007). *The Cultural Interface*; *Australian Journal of Indigenous Education*; 36,7.

cultural biases held by researchers [3], stress the importance of recognizing the colonial origins of design methods [30], and argue for centering community values in the research design process [32, 33]. This includes resistance or misalignment with dominant Western approaches to participation and knowledge sharing. Design, too, is challenged in response to local worlds, as Indigenous knowledges cannot be fully translated, explained, or understood within Western design logics. This challenge often limits the scope of pluriversal approaches to co-design (including collaborative research methods), presenting alternative ways of being and engaging in participatory research that do not smoothly fit within the transactional nature of many project-based design relationships.

Co-designing with Indigenous peoples, communities, and contexts has been well articulated by scholars and practitioners working at the intersection of design, community engagement, and decolonial research. Co-design, when grounded in Indigenous methodologies, prioritizes relationality, reciprocity, and respect for cultural knowledge [1, 2]. Co-design scholars working within Indigenous community contexts have also emphasized the significance of navigating divergent knowledge systems. Winschiers-Theophilus, Bidwell, and Blake [3], for example, reflect on their position as Western-trained designers engaging with African Indigenous knowledge systems. They acknowledge the impossibility of fully comprehending African Indigenous knowledges from the outside focusing on a ‘deeper awareness of the differences in knowledge systems.’ They articulate the many tensions and practical challenges involved in this work, from language and cultural difference to navigating power and trust. These insights point to

the broader need for co-design methods that hold space for respectful negotiation across conceptual, linguistic, and epistemological boundaries. Engaging with Indigenous knowledges also requires ethical awareness and situated restraint. As Akama et al. [1] remind us, co-designing ‘requires a respect of thresholds of places, situations, knowledges, relationships ... This requires us to not cross over these thresholds without explicit invitation and guidance in how to do so.’ Rather than treating all knowledge as accessible, and relationships as an assumed component or outcome of collaboration, this perspective foregrounds invitation, patience, ethical, and epistemic commitments through relational, dialogical, and place-based practices.

4 Bringing two-way learning to co-design

Co-designing with Indigenous peoples and communities carries responsibilities that extend beyond the ethical applications of methods, toward a relational, and transformational practice [1, 2]. This orientation challenges normative assumptions in co-design around participation, neutrality, universality, understanding, and knowledge sharing. For non-Indigenous researchers, this invites a necessary reckoning with positionality, the legacy of extractive research, and the limits of understanding [3, 4]. Co-design, then, becomes not simply collaborative, but ontological, demanding epistemic humility, sustained relational engagement, and a commitment to co-learning that remains accountable to Indigenous sovereignty. In bringing two-way approaches to co-design, designing becomes a relational act that is accountable to Country, to community, and to the cultural protocols that guide Indigenous ways of knowing, being, and doing.



Figure 3: Reclaiming Aboriginal Knowledge at the Cultural Interface. From Yunkaporta, T., McGinty, S. Reclaiming Aboriginal knowledge at the cultural interface. *Aust. Educ. Res.* 36, 55–72 (2009). <https://doi.org/10.1007/BF03216899>.

While many participatory design frameworks emphasize reciprocity and inclusion, two-way co-design does not seek to incorporate Indigenous perspectives into dominant design methods or approaches. Instead, it unsettles assumed foundations of collaboration. Emerging from Indigenous pedagogical and community priorities, particularly two-way learning frameworks developed within First Nations education contexts in Australia, it repositions and centres Indigenous sovereignty and relational ethics as the foundational conditions under which collaboration can occur. Within this framing, non-Indigenous designers are invited to enter into ongoing, negotiated relationships of accountability shaped by Indigenous authority, marking a shift towards reciprocity, rather than greater access or understanding. Such participation requires non-Indigenous researchers and participants to make their own knowledge systems visible and available also, whether institutional processes, funding mechanisms, or design expertise, recognizing how commercial and institutional knowledges also shape collaborative conditions. Positioned in this way, non-Indigenous researchers contribute as accountable collaborators from their own positions. Attentiveness at moments of encounter becomes essential, requiring non-Indigenous researchers to remain situated within their own standpoint and participate responsibly without assuming entitlement to translate, know, or fully comprehend knowledges within dominant frames of reference.

As Nakata [16] reminds us, the cultural interface is never neutral, but a contested and politically charged space. Two-way engagements must therefore work through structural imbalances while supporting Indigenous sovereignty in knowledge creation. Internationally recognized Indigenous Cultural and Intellectual Property (ICIP) expert and Wuthathi/Meriam lawyer Terri Janke similarly argues that two-way exchanges of Indigenous and non-Indigenous knowledges can create new pathways in Australian design, provided partnerships respect First Nations people as researchers in their own right, support First Nations research and economic goals, and champion projects that are First Nations-led [34]. By acknowledging and examining colonial inheritances and knowledge systems from the outset, then engaging in dialogue, exchange, and collaboration, two-way co-design repositions collaboration in a grounded way to respectfully navigate together through diverse currents of knowledge.

5 Methodological framing

The Solid Lines project ran over 3 years, beginning in 2021 and launching in 2023. Guided by Aboriginal Participatory Action Research (APAR) [36], which integrates Indigenous worldviews with participatory, action-oriented research cycles of planning, action, and reflection. APAR emphasises self-determination, strength-based approaches, and community control over research agendas

and outcomes. The methodology was also informed by approaches that prioritize Indigenous agency and the co-existence of multiple epistemologies [37, 38]. Drawing from multiple participatory and relational modalities such as deep listening, yarning, and story sharing, the project sought to bring First Nations voices from across Australia together to reflect on their experiences within the design and commercial art industries, and to co-imagine what a culturally safe and self-determined illustration agency might look like [39]. Ten First Nations creatives from diverse Nations and regions participated, spanning early to mid-career stages and practices across illustration, graphic design, and fine art. They were joined by a First Nations cultural mentor and workshop facilitator, an Indigenous Cultural and Intellectual Property (ICIP) legal expert, Indigenous governance expert, and a representative from the industry partner. First Nations creatives were recruited through an open expression of interest circulated via community networks, complemented by targeted invitations to ensure diversity of gender, region, practice, and career stage. There were three stages of collaboration, designed to loosely follow APAR cycles of planning, action, and reflection, and supported by three facilitated workshops (two to four hours each, conducted online as a result of COVID-19 lockdowns), and ongoing asynchronous dialogue via a private Slack workspace.

The first stage established the conditions for meaningful and culturally grounded collaboration and focused on understanding how First Nations artists wanted to be supported and represented, and on identifying opportunities, barriers, and strengths in existing pathways into design and commercial art sectors. The initial two-hour workshop centered on surfacing participants' experiences, aspirations, values, goals, and priorities shaping their work. Through yarning and deep listening, the group identified key priorities and risks. These early dialogues supported the articulation of both individual and collective aspirations. First Nations creatives articulated core questions and principles for what an Indigenous-led illustration agency could and should be, and what values would underpin it. From these discussions, four shared goals were co-defined:

- to define values and principles for a culturally safe representation model;
- to explore governance and licensing options aligned to Indigenous Cultural and Intellectual Property (ICIP);
- to prototype an adaptive framework for a First Nations-led agency; and
- to build reciprocal understanding between First Nations creatives and non-Indigenous industry around timelines, briefs, and client education.

This initial workshop provided both a foundation and structure for ongoing collaboration. It also surfaced divergent and convergent perspectives between First Nations artists, researchers, and industry representatives, allowing the group to collectively frame what success might mean for an Indigenous-led agency. This phase prioritized acknowledging that trust, consent, and cultural grounding are essential prerequisites for co-design. It also enabled the research team to adapt timelines, communication methods, and expectations, particularly during the COVID-19 pandemic.

The second stage centered on collaboratively developing business and governance frameworks to support First Nations-led representation within the design and commercial art industries. A

four-hour workshop, again facilitated by First Nations cultural mentor, featured contributions from Indigenous Cultural and Intellectual Property (ICIP) and Indigenous governance experts, as well as the industry partner representative. Participants brought together industry and community perspectives, enabling dialogue around sustainable and ethical models of representation that align commercial and cultural values. Co-design activities during this phase included visual mapping of career and cultural safety pathways and value constellations, modelling agency structures and licensing models and options, and metaphor and language testing for communicating the agency's purpose. This stage translated community-identified values into potential operational frameworks for the agency, including options for commission structures and client protocols. Participants used Slack to refine ideas, comment on emerging frameworks, and respond to prompts within their own time. Transparency and accountability were built into these exchanges, as posts, documents, and processes remained under participant review and established a shared sense of ownership. The asynchronous nature of Slack enabled low-pressure, accessible contributions in participants' own time and voice, sustaining continuity between group online sessions and allowing ideas to evolve through collaborative reflection.

The final stage focused on evaluating outcomes and synthesizing insights through collaborative analysis. Participants reviewed visual maps, conceptual and governance models, and cultural protocols via Slack, proposing revisions and amendments to ensure the framework aligned with community priorities and cultural protocols. Data analysis occurred collaboratively, with participants helping identify key themes, values, and strategic outcomes for the agency model through a two-hour workshop. A key aim of the research was not to conclude with a definitive product, but with a living, adaptive framework for an Indigenous-led agency grounded in cultural sovereignty and economic self-determination.

6 Navigating knowledge systems towards shared futures

The outcomes of the Solid Lines project emerged as living frameworks, relational insights, and guidance for transformative shifts for industry practice, reflective of the project's commitment to Indigenous-led decision-making, iterative co-creation, and collective authorship [40]. The reflections offered here focus on personal and relational accounts of how a two-way approach to co-design unfolded. Foregrounded here, are insights and shifts in conditions, relationships, and processes that emerged through my own practice of collaboration and mutual learning. Rather than presenting a transferable two-way approach, this account reflects on how co-designing was reshaped through ongoing negotiation, mutual learning, and attentiveness to cultural authority. In doing so, it offers grounded insights into how non-Indigenous researchers might participate responsibly in collaborative work shaped by relational accountability and plurality.

6.1 Shared vision and values

A key enactment of two-way co-design was situating transparency as an active and ongoing process of building trust and accountability. For me, this began by unpacking and making visible the

‘default’ logics of commercial design that typically go unexamined. Acknowledging these structures, built and maintained by dominant socio-political structures, Euro/Western knowledge systems, and the underlying rules, codes, and assumptions within the discipline was an important grounding. As was acknowledging my own complicity within them, and how they have been shaped through my education and industry experiences. As someone able to move with relative ease through commercial industries without ever being asked to articulate my cultural standpoint, I had benefited from the invisibility afforded by dominant systems. Naming our positions created a starting point for negotiating how the venture might take shape.

Transparency also extended to the industry partner’s operational model. From the outset, participants emphasised the need for openness: ‘There needs to be transparency with the way this new venture comes about and it needs to be First Nations-led.’ With the founder of the industry partner responding: ‘Working in this way is new for me and my goal is to put out as much information as I can, as transparently as possible, and then answer any questions about our model. Hopefully we can use that as a brainstorming method for figuring out what this relationship could look like. What this business could be and how it could work.’ This openness made visible the processes and assumptions that typically remain hidden in commercial design contexts, creating space for First Nations participants to question and critique dominant industry practices. Here, industry partner knowledge to be shared without concerns for how it might appear or be useful for First Nations creatives at the outset. Nor did it presume industry and commercial practice would be in opposition to Indigenous priorities. Within dialogues, industry knowledge was seen as a valuable knowledge system, especially as the success and reputation of the industry partner was not only known amongst participants, but a factor in their participation, in wanting to engage with a leading commercial agency. Situating this upfront, as one stream of knowledge, meant often hidden or assumed industry practices could be discussed, before moving into spaces where they might meet and interact with First Nations knowledges, values, and priorities.

Mutual accountability emerged as a further enactment of shared values. This was demonstrated by participants insisting cultural labor, including the often unseen or uncompensated work of educating clients and explaining and translating cultural context was central to shaping a culturally safe model, and something that must be recognized, valued, compensated and structurally supported. These exchanges shifted responsibility toward the industry partner, that they must share this cultural load and support First Nations creatives by engaging and educating clients, not leaving this work to First Nations people. In doing so, cultural priorities began to reshape industry expectations. This included educating clients around the diversity of art styles across First Nations peoples across Australia. One artist explained: ‘I think the industry partner can support the initiative in a way that big brands will realise there is more than just lines and dots. More than one Aboriginal style. I think that’s an important starting point’. The co-design process revealed a desire to create environments where cultural identity, safety, and creativity could coexist alongside commercial success. One participant reflected: ‘I think you can walk those two lines of working with big companies and big clients but keeping that

cultural integrity and holistic community aspect. There is room to do things differently without shutting out the opportunities that can lead to financial and creative independence and benefit.’ This metaphor of walking two lines reflects how two-way approaches can hold space for diverse streams of knowledge and learning how to work together in relation through an ongoing negotiation of values, boundaries, and labour. Two-way co-design here operated within Nakata’s cultural interface as ways of negotiating the ‘constant process of endless and often unconscious negotiations between these frames... for viewing, understanding, and knowing the world’ [16, p. 10]. It meant bringing these negotiations to the surface and noticing where streams could meet for mutual benefit, and where they might create the potential for ripples or transformative currents within industry practices.

6.2 Reshaping design through industry transformation

For dominant design industries to genuinely support First Nations participation and leadership, transformation must occur beyond symbolic inclusion. It requires structural and epistemological change in how design is commissioned, authored, governed, and valued. Throughout the co-design process, participants emphasized that any new agency model must begin with First Nations worldviews. In facilitated dialogues, First Nations creatives challenged dominant assumptions around authorship and ownership, emphasizing collective or community creation and custodianship. One participant explained: ‘Our art is not just art. Clients need to be aware this is storytelling. This is culture. We will always own that. But we are happy for clients to work with us, and use our art, and pay us for it, but we have to keep that integrity, that this is our story, this is where we are from, this is who we are and you can’t buy that or take that from us.’ Surfaced here were tensions between ways of designing as relational, temporal, collective, and inseparable from kinship and Country, with commercial expectations and industry norms around of efficient, outcomes-driven, and individual authorship. Here, tension between business functionality and cultural grounding were positioned as sites of generative exchange. Crucially, First Nations participants did not reject industry structures outright. Instead, they engaged in critical dialogue about how these structures could be reimaged or subverted without compromising cultural integrity.

The support offered by the industry partner was understood as a strategic platform, or an existing infrastructure that could be used to scaffold a new, Indigenous-led entity. One participant mentioned ‘I like the idea in the early stages of trying to create something side by side, but sort of under the wing of the industry partner. Then when this venture, or this bird is ready, it can go out on its own.’ The metaphor of a nest and fledgling became a powerful visual and conceptual analogy, enabling participants to articulate a pathway that began with shared infrastructure and culminated in full First Nations control. Expressed was a desire for both interdependence and autonomy. The industry partner echoed this shift: ‘I don’t want this to be an industry partner-led thing... but if it’s too hands-off then it might not get the best start that it needs. I see a coming together or reconciling of these two aspects—the cultural needs and values and then making sure there is

access to the systems and networks we have.’ A two-way approach supported transformation within dominant systems by inviting industry collaborators to recognize the knowledges they hold and maintain, and begin to unlearn habits of control and authority, to be open to other ways of working, and create spaces to support First Nations-led decision making. To hold space and offer support when invited, while affirming a trajectory toward First Nations control.

In enabling First Nations participants to lead on when and how their knowledges, values and practices would come into a relational knowledge space, assumptions underpinning how creative work could be commissioned and licensed began to shift. For instance, when cultural mentors and lawyers introduced ICIP protocols, it challenged dominant licensing models but also revealed how these could evolve to uphold cultural integrity without sacrificing commercial viability. First Nations cultural protocols, such as ICIP also worked to reshape internal practices, such as contract language, client education materials, and briefing templates. These dialogues provided a mutual learning space for the industry partner to begin to unlearn extractive habits of speed, ownership, and authorship, and to learn about models of shared governance, collective and community authorship, and the diversity of First Nations practices around Australia. My role was to support the creation of these spaces where participants could surface tensions and share practice and cultural knowledges. This sense of mutual exchange also made industry transformation seem more tangible by foregrounding respect for divergent knowledge systems to sit alongside each other, to demonstrating how commercial success can coexist with cultural sovereignty.

This vision materialized in a collaborative developed, staged adaptive agency framework structured around three evolving phases: nesting, incubation, and independence [40]. The ‘nesting’ stage established a First Nations incubator within the industry partner’s existing infrastructure. This phase leveraged the partner’s operational resources while ensuring First Nations oversight through a First Nations cultural consultant and manager, and independent First Nations advisory body. The incubation phase focuses on the establishment of a registered First Nations business with its own governance, compliance, and reporting structures, that is over 50% Indigenous-owned and operating with financial independence. The final phase details the full transfer of leadership and ownership to the Indigenous business. At each stage, shared values, cultural principles and ICIP protocols were foregrounded to ensure that Indigenous sovereignty, authorship, and accountability remained central. The framework enabled staged growth and safeguards against tokenism or premature handover. It demonstrated how mainstream design infrastructure could be reorientated, redistributing authority, embedding cultural governance, and shifting responsibility for client education and representation to support Indigenous self-determination. Unsettling the foundations of industry infrastructure, which is often seen a neutral scaffolding, enabled a reconfiguring of authority and accountability, an unlearning of habitual modes of control embedded in commercial practice, and mutual capacity-building and continued knowledge sharing.

7 Reflecting on Two-Way Co-Design in Practice

Co-designing in contexts where Indigenous and non-Indigenous people collaborate is often turbulent, as these interactions are shaped by long histories of colonialism and deeply embedded systems of ‘othering’ [1]. Such work demands sensitivity to the ways design is entangled within layered structures of power, knowledge, and cultural value. Co-design must reckon with these asymmetries and the legacies of exclusion that continue to shape our disciplinary practices [1]. This requires challenging the dominance of Euro-Western paradigms that have historically marginalized other ways of knowing [1, 4, 41]. Working in this context requires a practice of ongoing negotiation across difference—one that acknowledges how we are always becoming-with-many, continually reshaped by the encounters, protocols, and stories that form our shared work [1]. For me, this required continually negotiating how to contribute meaningfully within a process grounded in First Nations priorities. It involved letting go of control, embracing uncertainty, and being willing to move at a different pace [5]. In practice, I learned to resist urgency, to allow pauses, silences, and the time needed for collective reflection, and to design facilitation structures that prioritized deep listening over generating outcomes and outputs. The process became about staying present in the complexities of working across difference, noticing subtle shifts in the tides and creating conditions for shared deliberations after any waves of convergence.

Over time, I came to understand my role not as a neutral observer but as someone always implicated in the relational and political dynamics of the work. Objectivity and neutrality, long upheld as the hallmarks of valid research, often conceal power and privilege. Reflexive design practice instead insists on transparency about the researcher’s position in time, place, and experience [6]. Designing participatory mechanisms such as workshops and engagement processes are not neutral acts, as much as we, as co-design researchers seek for these spaces to enable and support participants, and their worldviews, to engage and feel comfortable in doing so. These co-design structures were shaped by my own embedded knowledge system, values, and power dynamics in a situated relationship to all those involved in this project.

Importantly, the shared dialogic approach challenged the extractive logics embedded in many participatory methods. When Indigenous perspectives are positioned as ‘adding value’ to dominate practices, it can often situate the discipline as the primary benefactor of the collaborative work, rather than resetting design’s epistemic foundations [35]. Participants actively resisted such framing, refusing the flattening of cultural complexity. For example, when discussing concepts such as intellectual property or ownership, participants reframed these through the lens of custodianship and kinship obligations. Commercial contracts and briefing templates were subsequently reconfigured to reflect custodial responsibilities and protect Indigenous sovereignty. I came to understand that industry change is rarely the result of major interventions, but of sustained relational work that recalibrates how power, authorship, and responsibility are distributed.

8 Making relations and positions visible

Two-way co-design offers a response to navigate the tensions that often arise around knowledge sharing, particularly in contexts shaped by settler-colonial dynamics. Rather than assuming all knowledge must be made available, translated, or made legible within a shared design process, this work demonstrates how different knowledge systems can sit alongside one another, each grounded with their own responsibilities and protocols. Knowledge is not treated as a transferable resource to be owned, extracted, or commodified, but held in custodianship, emerging from place-based relations, protocols, and responsibilities. The Solid Lines project illustrates how collaborations can unfold at the intersection of Indigenous epistemologies and dominant design industry systems. Industry participation became about understanding its own assumptions and unlearning dominant systems before coming to relation to First Nations practices and knowledges. By bringing together First Nations perspectives and the commercial design sector through mutual knowledge sharing, the project fostered a pathway to create Indigenous-led, culturally safe processes, ones that can be supported, rather than shaped, by mainstream industry.

Resonances with decolonial frameworks emerging in other settler-colonial settings highlight a broader shift in how plurality is understood within participatory design. Mi'kmaq Elder Albert Marshall's concept of *Two-Eyed Seeing* offers a powerful parallel, advocating for learning to 'see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other with the strengths of Western knowledges,' and to use both eyes together for the benefit of all [17]. Rivera Cusicanqui's *ch'ixi epistemology* similarly articulates the coexistence of difference without synthesis, inviting what she describes as 'generative collisions' between worlds [18]. Each offer grounded, practice-based ways of working that embrace coexistence and multiplicity as generative. For scholars and practitioners, these approaches provide a tangible basis for reimagining participatory design as a process of ongoing negotiation, one that makes visible the political and ethical dimensions of collaboration. In doing so, they invite design researchers to reframe participation as an act of accountability within relationships, to continually work across divergent worldviews, and to sustain dialogue and shared futures.

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Designing Community Trust through Collective Intergenerational Memory Sharing

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Abstract

Efforts to address multilingual problematic information have mainly focused on fact-checking, prebunking, and content moderation, but big tech companies have largely abandoned these efforts [20, 70–72]. Our work fills this gap by identifying ways to help multilingual communities navigate complex information in both English and their ancestral languages. We conducted 47 community-based participatory design workshops with the Vietnamese diaspora across 9 U.S. cities, representing various migration waves, ages, social, and economic statuses. These workshops focused on sharing identity-driven stories, contextualizing them with socio-historical events, and comparing them to social media content. We identified two key CBPD practices: building intergenerational trauma-informed trust and prioritizing pluriversal perspectives over technology’s universality. This study offers designers and researchers practical approaches for fostering cultural empowerment and trust in multilingual and diaspora communities, particularly in the face of problematic information and institutional distrust.

CCS Concepts

• Empirical studies in collaborative and social computing; • Empirical studies in HCI; • Participatory design;

Keywords

Community participatory design, immigrants and refugees, intergenerational, multilingual, misinformation, trust

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1 Introduction

On a Saturday afternoon, five Vietnamese Americans—two second-generation, two 1.5-generation, and one first-generation refugee—gather at a large oval table in The 3 Sisters conference room, named after the three sisters in Vietnamese folklore symbolizing luck, fortune, and prosperity. Chris, a young 1.5-generation Vietnamese man, of the Millennial generation, sits at the head with five cups of cà phê sữa đá (iced coffee). As he discusses the history and impact of this coffee on U.S. culture, the group tastes different variations. Chris explains how the lifting of trade sanctions between the U.S. and Vietnam in 2000 spurred the growth of Vietnamese businesses [51]. He links this economic shift to the five waves of Vietnamese migration [40], reflecting on the diverse political and educational backgrounds of each wave. He notes that the current narratives on social media blaming China for U.S.-Vietnam ties overlook more complex, intergenerational factors involved.

This moment is an example of a workshop, known as *Sharing Stories, Sharing Trust*, in which intergenerational groups of Vietnamese Americans gathered to exchange stories, make sense of the disparate stories they have learned about Vietnam as a country, and piece together their understanding of the multiplicitous social, cultural, economic, political, and historical accounts of Vietnamese identities that appear on social media that may disagree from their lived experiences. These workshop participants’ experiences can be understood through the events, and subsequent online discourse, that took place in the U.S. Capitol Hill on January 6, 2021. On that fateful day, a diverse range of flags were flown throughout the Capitol Hill insurrection. Waving symbols of present-day America, Trump’s 2020 presidency, Confederate states of America, extremist patriotic ideological groups, and even the Republic of Vietnam sprinkled the chaotic scene, being raised, praised, and televised across social media and mainstream media [36, 45]. In this article, we focus on the impetus, rationale, and impact that undergirds the presence of the Republic of Vietnam flag, also known as the flag of South Vietnam or the “Vietnamese Heritage and Freedom Flag”, at the January 6th insurrection. Its presence sparked immediate online discourse about the bright yellow flag with three bold red stripes, a symbol of pre-communist Vietnam. People of the Vietnamese diaspora ruminated, argued, praised, and reprimanded the flag’s presence, belonging, and meaning to the American values

of freedom and democracy [36]. Polarization about the flag is not new to the Vietnamese diaspora [1] an ongoing conflict that has divided and fragmented the community since the end of the American War in Vietnam (also known as the Vietnam War). Since the early aughts, historians and scholars have come to understand the impetus and drive of these disconnections through historical and sociological approaches. We explore the means to address these longstanding unspoken conflicts around the materiality of the political flag through community based participatory design (CBPD) methods.

Recently, polarized discourse around politics, health and medicine, and science have not only become a universal issue around mis- and disinformation (misleading or harmful information, hereafter, referred to as problematic information), but the issue is exacerbated and further problematized in communities of multilingual immigrants and refugees. Critical disinformation studies have critiqued this as a contextual issue of histories of political and racial disinformation upon traditionally marginalized communities [24, 25, 39], which resulted to a call-to-action to re-imagine methodological approaches to address problematic information in diasporic communities [33]. In this article, we offer a methodological approach that enhances the theory and practice that existing research on social media, social movement, political discourse, and problematic information lacks. While much of existing research focuses on analyzing large social media datasets, we explore a CBPD approach to understand the polarized lived experience of a specific refugee multilingual community (the Vietnamese diaspora) and how to reconnect and reconcile across intergenerational information and communication divides [30, 34]. We demonstrate the power and impact of diasporic workshops under the CBPD framework, to not uncover the rationale behind problematic information, à la the history of the flag, and the physical, behavioral, and cultural practices which designers, researchers, organizers, and community members can mediate affects of care, peace, and dialogue among intergenerational divides.

To address this problem, we collaborated with members of the Vietnamese diaspora in the U.S. and UK to develop time and space for conscious conversations on social, political, and technological harms and opportunities in relation to problematic information and media literacy. Similar CBPD work has been done in the context of public library systems and English-first community organizations [22], and this article expands upon this discourse as we examine this gap in the lack of understanding from multilingual, non-Anglocentric, and immigrant/refugee communities' perspectives. This article offers a methodological contribution that argues for CBPD practices that (1) develop intergenerational infrastructures of trust, (2) centralize pluriversal needs and perspectives of community before the universality of technology, all of which empower designers and researchers with affect towards cultural empowerment in the face of problematic information and increasing distrust in institutions and technologies.

2 Background

2.1 Community Based Participatory Design with/by/for Immigrant Communities

Participatory design (PD) methods stemmed from the need to move design expertise out of formal office settings and into public spheres, bringing democratized design processes towards “open and user driven innovation” [3, 5] equitable knowledge production. Similar participant-involved design processes include Participatory Action Research and Community-Based Collaborative Co-Design. These design processes lack the intentional democratization that PD does through the inclusion of participants through the processes of creation, development, and analysis of the outcomes, which is further emphasized in one type of PD approach, known as community based participatory design (CBPD) [22]. In CBPD, the design process relies on community dynamics [42] and underscores the values of pragmatic, active participation, empowerment, and reciprocity for all stakeholders [6, 14, 18] while honoring participants as equitable experts. There are some examples of CBPD practices with communities in the Global South [42, 47] but there is lack of research practicing CBPD done in refugee diasporic communities. While CBPD has been researched with immigrant communities [48, 49, 61, 62], CBPD has not been investigated in the context of refugees which is particularly imperative given intergenerational memories of trauma on systemic and interpersonal levels.

In this article, we are interested in CBPD with/by/for immigrants and refugee diaspora communities. In these communities, there are intersectional qualities such as multilingual, intergenerational, and lived experiences of harmful colonial power dynamics that need to be considered throughout the design process. This article is a case study of a CBPD methodological approach from a larger research project that investigates the Vietnamese diaspora collective memory relates to their sensemaking of problematic information within contemporary information diets. We ask: What values and processes are needed to develop CBPD with/by/for immigrants and refugees who require multilingual programming? Through understanding the values and processes needed to integrate intersectional qualities, CBPD can be a model to better engage immigrants and refugees between generations towards participatory policymaking, sustainable transitions through collaborative decision-making, and inclusive policy frameworks and interventions.

2.2 Intergenerational Design

Design from the intergenerational context has involved interactive play and relationships between primarily grandparents, parents, and their children. By bringing together people of different age generations, design researchers have been able to introduce enjoyable, intimate, relational, and malleable hierarchies of social interactions in their explorations of design [10, 37, 38]. In this article, we look at design perspectives among intergenerational immigrant and refugee communities. This means that design practices must include the immigrant and refugee experiences of multilingual access, transnational margins, and intersectional boundaries of each generation including age, the time period in which they emigrated, and their relationship to their family's first migration.

Current intergenerational design literature does not address these intersectional definitions of intergenerational relationships.

In a special issue dedicated to “intergenerational context as an emphasis for design”, the literature advocates for “meaningful activity between older and younger people [... as they] explore technological opportunities for establishing the mutual involvement of alternate generations and offer specific design suggestions that can support and promote such intergenerational connections” [17]. The collection offers insight to the significance of “accessibility beyond the interface”, playful engagement, visual imagery, reciprocity, and malleable hierarchies of control in social relations [17]. These probe at the interpersonal, intergenerational familial relationships, but the generalization of cultural contexts within these intergenerational relationships and the emphasis on the nuclear family structure does not address the social and civic infrastructures that immigrant and refugee diaspora rely upon. In this article, we seek to broaden the perspective of intergenerational design by looking at organizations, systems, and community groups and their members within.

From immigrant and refugee contexts, intergenerational design also requires a deep understanding of linguistics. Multilingual as a translational act is multifaceted. Multilingualism can include direct translation from one country’s language to another country’s language (i.e. English to Vietnamese), but in intergenerational and immigrant dynamics there are temporal dialects and social hierarchies that can severely alter meaning and intent of language. In the Vietnamese context, “moral and affective positions in conversational narratives” depend on honorifics and kinship [32, 35]. Additionally, diction that aligns with pre- or post-1975 and dialect convey North, Central, or South regions of Vietnam further signifying political alliances and educational background. The impact of intergenerational linguistics has yet to be explored in design, which can create barriers to inclusive, participatory, and civic design challenges.

Current human-computer interaction literature has focused primarily on age related intergenerational practice of language brokering [26, 56]. The design of considering language brokering has yet to be put into practice during development processes. Furthermore, language brokering still focuses on interpersonal individual relationships. This article probes at intergenerational design and its opportunities to consider the various influences of linguistics and scope of individual to communal and systemic levels of intergenerational relations throughout the design process [25]. In practices conducted throughout our CBPD workshops, we provide intergenerational design suggestions that address the interplay between transnational systems and local experiences and agency, resistance, and cooperation at local individual to communal transnational efforts. While there is inter-community polarization due to widespread problematic information in immigrant and refugee communities, there are opportunities to make use of intergenerational design to understand: *How do design expertise and practices serve or not serve transnational communities and their information systems?*

2.3 Design for Trust and Civic Participation

Trust is key to design processes particularly when researchers and designers attempt to engage with what they refer to as community members of the public sphere. This assumes that there are

knowledgebase, social, economic, and capital divides between researchers/designers and participants, members of the public sphere. Scholarship understands trust to be dependent on design implementation such as conforming to genre expectations, infrastructure of production and engagement, distinction from mainstream, and the inclusion of aesthetic, social, or technical stylistic design elements that convey legible political ideology [74]. Important dimensions of trust include commitment to processes, transparency, reciprocity, relationality, and onto-epistemologies of members within and outside of communities, which has been engaged with in PD literature [5, 7, 29, 43, 48]. Therefore, in analyzing our results, we looked for changes in those dimensions of trust within the communities with whom we were collaborating with. Those changes are discussed in our analysis section.

At the intersection of trust and CBPD, community members are reframed as domain experts who actively contribute to the entirety of the design process. With intentions of trust-building among researchers/designers and their collaborators (of the public sphere), there are deep relational formations constantly evolving—as is the human experience—to inform and maintain trust building between all individuals participating in CBPD.

Björgvinsson et al. focuses PD on two case studies of immigrant communities to catalyze “democratic innovation” by way of an “open innovation milieu where new constellations, issues and ideas evolve from bottom-up long-term collaborations amongst diverse stakeholders” [5]. One immigrant community consisted of first- and second-generation youth immigrants, the other immigrant community consisted of a multi-ethnic women’s resources group. In their design process, Björgvinsson et al. contributed to PD in admitting that to build trust and genuine engagement with the immigrant communities of their case studies was to honor the pluriverse of perspectives, allow controversies and dilemmas to exist, and explore the possibilities from those hurdles. This affords the space to develop the democratic design process of heterogeneous representation and “innovative transformations” [5]. In this article, we apply this exploration of “bottom-up long-term collaborations amongst diverse stakeholders” through our own CBPD workshops with intergenerational Vietnamese immigrants and refugees. By co-designing workshops that are accessible to their heterogeneous language, cultural, literacy, and temporal needs, we seek to center historically marginalized communities navigating resettlement of a new home/community within systemic transformations. This will be an applicable exploration to existing sociological theories in critical refugee studies that call to necessitate participatory approaches that contend with historical contexts of colonial, militarized, and imperial power dynamics that initially sowed distrust, in order to activate local knowledges and re-engage Vietnamese diasporic communities to be inspired to acknowledge their own political identity formation, and thus, civic participation [15]. To do this, we ask: *How can researchers, resource providers, and policy makers design systems to regain trust from communities who are made up of immigrants, refugees, multilingual literacy, and transnational networks?*

3 Methodology

3.1 Research Context

To address transnational information challenges in the Vietnamese diaspora, we partnered with Viet Fact Check (VFC), a volunteer-run non-profit dedicated to translating and fact-checking English mainstream news into Vietnamese, with relevant cultural and political context. Our previous work with VFC during 2020 and 2022 U.S. elections revealed that fact-checking alone was insufficient to combat the spread of misinformation and reduce polarization in Vietnamese diaspora communities [30, 34]. By collaborating with a journalist knowledgeable about the diaspora, we expanded VFC’s mission to include workshops, media coverage, and research, shifting from a focus solely on fact-checking to a more holistic, community-driven narrative change initiative—one with potential for adaptation in other multilingual diasporas. Through this, trust is operationalized through community members’: genuine willingness and intrigue to partner with scholars, researchers, and designers; proclivity to engage with activities and open to researchers given sensitive topics, and their reactions during and post-research engagements (i.e., mood/energy levels concluding research engagements and interest in further engagements).

Our partnership led to an experimental, community-centered methodology aimed at addressing gaps identified during the 2020–2022 election periods. We recognized that the Vietnamese diaspora’s media environment, shaped largely by the community itself, remains underfunded by mainstream media and technology. What began as an information void, allowing misinformation to thrive, evolved into a collaborative effort to co-design workshops that fostered information and media literacy. Rather than each sector (academia, journalism, and nonprofits) working in isolation, we united to address shared challenges and create cohesive research, findings, and public messaging to ensure accurate, consistent information.

With the same mission that VFC started with, “to address the spread of disinformation and power in the Vietnamese diaspora”, the triangulation of collaborators offered checks and balances and support across industry efforts. Academia requires the institutional review of nonpartisan ethics as well as documented transparency in the background, methods, data access, and implications through long-form peer-reviewed research. Mainstream media and investigative journalism come with efforts in nonpartisan, neutral, data-driven reporting. The rapid temporal nature of journalism also allowed for more immediate exposure to the community and public interest than academic research could allow. Finally, VFC as a community-based organization following the “nothing about us, without us” ethos [53] provided an avenue of community trust and networks. Across these three organizational intentions and expertise, we were able to co-design a skeleton of information and media literacy workshops to share and receive community-grounded rumors, narratives, and interests to inform their own research on problematic information spreading across the Vietnamese diaspora. The rest of this section will provide information on workshop participants, the design of the community workshops, data collection and analysis, and the affordance and limitations of our positionalities to this research.

3.2 Participants

The roles and makeup of participants of these workshops can be described in concentric circles that indicate their overlapping relationships and roles. See Figure 1. The most inner circle, dark blue, includes researchers and authors. We consider ourselves participants in the process of CBPD as we were learning, collaborating, and adjusting to research participants (interlocutors) just as much as they are doing the same processes alongside us but oftentimes on a shorter timescale. We are the inner circle because we are aware of all stakeholders and procedures throughout the research process from funding, socio-technical systems, recruitment, participants, data collection, analysis, publication, and presentation from beginning to end of the research and design process. The second layer, light blue, includes VFC and journalist and media collaborators. They contributed partial funding, resources, development of research questions, methodologies, workshop curriculum, labor in outreach and implementation, and data in the form of reflexivity memos. Due to their own personal and professional interests and needs, they did not contribute to the authorship and publication of the article. The third layer circle, dark orange, includes community organizers, host organizations, community researchers, and interpreters and translators. These may also be considered as “novice facilitators” because they are deeply rooted in local community knowledge, imperative to the workshop taking place in the local community, but their design expertise may vary [22]. We, as researchers, worked closely with and relied upon these facilitators for their values, expertise and relationships in community, and accessibility in co-designing each workshop to address community preferences, immediate needs, and local contexts. The fourth layer, light orange circle, includes community members recruited through word-of-mouth, organization listservs, social media, or bulletin board fliers to join the workshops as participants. These participants were not a part of the pre-planning of the workshops, but they contributed to the conversations, topic focus, and pace during the workshop sessions. Participants at the levels of the third and fourth concentric layers of involvement in the research were compensated for their time and expertise.

All participants identified as over 18 years old, a member of the Vietnamese diaspora (in that they emigrated out of Vietnam and/or have family relations to those born in Vietnam), and were fluent in Vietnamese and/or English.

3.3 Overview of Community-Based Participatory Design Workshops

The “Sharing Stories, Sharing Trust” workshops were made by and for the Vietnamese American community to hold an intentional space for sharing and finding trustworthy information by way of intergenerational storytelling, translations, and critical media literacy engagement. While framed as a media and information literacy workshop, each workshop session wove in critical engagement with cultural, generational, and political differences to continuously join together and practice information sharing towards collective understanding instead of polarization. Our intention was to develop and offer safe, communal spaces for members of the diaspora to discuss their experiences sharing, trusting, and understanding the spread of problematic information in their communities. This proved to offer



Figure 1: These concentric circles represent the five levels of involvement participants had in the CBPD research process for this project.

informative contributions to methodological approaches toward CBPD with immigrant, refugee, multilingual, and intergenerational communities.

Initially in early-Spring 2024, the workshops primarily focused on the Vietnamese diaspora in Seattle Metropolitan region (King County, Washington). By mid-Summer 2024 through April 2025 a total of 47 workshops were hosted in-person across multiple cities and states in the US—Oakland, CA; Milpitas, CA; San Jose, CA; Los Angeles, CA; Orange County, CA; Boston, MA; New Orleans, LA; Houston, TX—including a few in London, UK. 16 community-based organizations and libraries collaborated as facilitators. Each workshop lasted for up to two hours, hosted in community organization’s preferred familiar location, and had an average of 15 community participants per workshop, with a maximum of 60 participants in a session, a minimum of two participants in a session, and a cumulative total of 689 participants across all sessions. The youngest participant was 18 years old and the oldest participant was 86 years old.

While different levels of participation allowed for varied qualities of engagement in the co-design process of the workshops, all participants, regardless of level, engaged in a multi-method approach of community participatory methods toward information and media

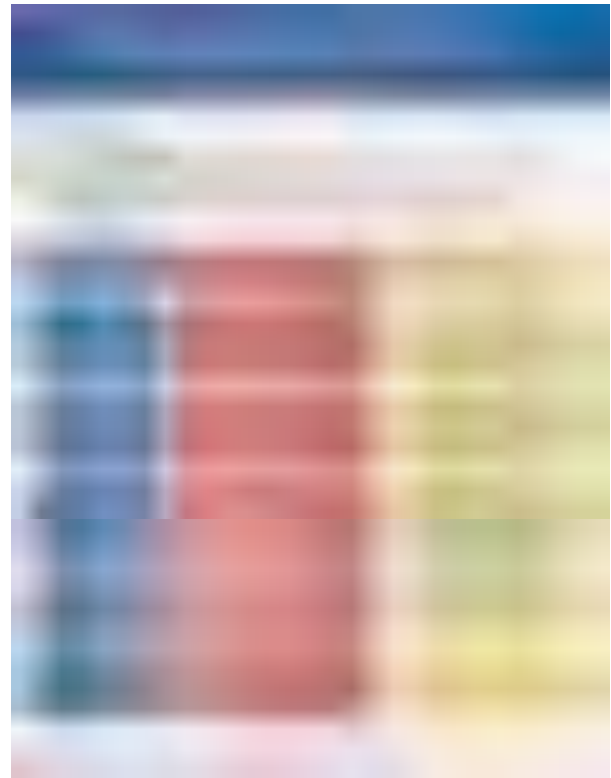


Figure 2: An affinity diagram of the activities conducted in each workshop. While this is the default order of the agenda, the activities were co-designed by the researchers, VFC, and journalists as modular sections so that workshop participants could curate and focus on their immediate interests and needs. [2]

literacy activities that involved four primary activities: (1) introduction and background, (2) story time with narrative fiction and a zine [60], (3) sharing information object and memories, and (4) review and survey of user experiences with existing resources and tools to mitigate problematic information [59]. Throughout each activity participants were encouraged to share, reflect, and enjoy food provided to create a familiar, comfortable, and relaxing environment amidst contentious topics. Figure 2 is an affinity diagram that was shared with all community collaborators to reference as they learned about the potential of the collaboration, co-designed their desired workshop curriculum, and communicated and recruited workshop goals and activities to their constituents.

All workshops were hosted in publicly funded spaces and coordinated by publicly funded organizations; thus, all workshops were open to the public. Outreach was done through social media, organization listservs and community networks, and local community members’ word of mouth. Workshops’ advertisement and presentation were conducted in English and either Vietnamese, Korean, or Spanish, depending on the community needs and preferences as consulted by partnering organizations. Partnering organizations also recommended and selected interpreters to conduct simultaneous or consecutive interpretation, according to constituents’ preferences

based on successes in prior local programming. All interpreters were briefed prior to workshops on the preferred neutral tone and dialect when discussing possible contentious and political topics. Prior to the start of each workshop, all participants reviewed and signed a form that agreed they identified as 18 years or older and understood the extent to which their anonymized data would be used and their rights to opt out of the research and workshop upon their choosing. All text-based materials, outreach, sign-up forms, consent agreement, and presentation slides were translated in collaboration between researchers, community organization leaders, and interpreters during the weeks leading up to the workshops. The process of translation contributed to the co-design process of each workshop session.

3.4 Data Collection

We conducted 47 in-person workshops in English and Vietnamese with researchers, designers, organizations, hosts, facilitators, and constituents between March 2024 through April 2025. See Table 1. Two of the workshops also included Spanish and Korean interpreters since the host community organization and facilitators serviced the Latine and Korean diaspora in their city. Data collection began during the planning stages of each collaboration, leading up to the workshop. After planning meetings with organizations and facilitators, the lead researcher documented reflection memos after each meeting and interaction [28] alongside the demographics of organizations, facilitators, and constituents. Further data was collected by way of the documentation created during the co-design of workshop presentation slides. Images, texts, and source references provided by organizations and facilitators provide distinct context for each workshop. During the workshop session, we collected observational field notes triangulated with post-workshop reflexive group discussions, and social media data gathered during the workshops. Organization leaders and facilitators contributed to the post-workshop reflexive group discussions. This triangulated data addresses gaps in the lack of multilingual access and critiques of socio-technical design in existing mis-/disinformation studies literature [33].

3.5 Data Analysis

Inspired by Braun and Clarke's reflexive thematic and inductive analytical approach [8], we analyzed researchers' observation notes, participants' written and audio recorded memos (Bryant & Charmaz, 2007), document and discourse analysis on objects and presentations provided by facilitators [27], demographic data of participants, and social media data provided by participants. With the flexibility of iterative reflexive qualitative data analysis, we developed themes that accounted for varied levels of community participants and their experiences from workshop activities.

All memos and observation notes were transcribed and imported into the qualitative coding software, Taguette. The first two authors immersed themselves in the data by reading and/or listening to the full data corpus, then applied open coding to document relevant quotes, objects, and social media posts that resonated with the primary research questions. For three months every other week, then weekly for the subsequent three months, the coders met to discuss and reflect on their reflexive analysis. Additionally, within that

same six-month time span, the first author presented preliminary data analysis to VFC, the journalist, and facilitators on a weekly basis to expand upon and/or clarify themes that resonated with their experiences.

The first author then brought these community conversations and additional discussion notes back to the second author which informed the primary themes presented in the results of this article. Limitations include geographic and regional spread from urban to suburban U.S. West, East, and Southern coasts to London, U.K. Each city and neighborhood grouping includes diverse cultural, socio-, historical, and environmental contexts that this article is not scoped to fully demonstrate into findings, which offers future research opportunities. Additionally, the diverse dialects across interpreters and community participants could have created translational obstacles because contemporary Vietnamese diaspora language includes temporal differences (pre-/post 1975) and regional differences (north, central, and south Vietnam dialects). The depth of our reflexive thematic approach across the workshops enabled us to more closely engage with the pluriversity of perspectives present at each of the 47 workshops.

3.6 Positionality Statement

As researchers of diverse associations to the communities in this research, we emphasize the importance of the relationship between the authors, data, and participants in the contexts of reflexivity throughout the methodological findings presented in this article [12]. The authors and researchers contributing to this work, knowingly and unknowingly, bring individual identities, affordances, and limitations that shape the contributions offered in this work. With this statement, we seek to acknowledge to readers that the diversity of perspectives that influence the research process and its outcomes are imperative to the contributions and opportunities for future research.

All authors are affiliated with the same public R1 university and department in the Pacific Northwest region of the U.S. They are fluent in English and are publicly affiliated with higher education. All authors have contributed to the methodological approach and analysis at varying degrees, given their varied roles and statuses in the university. Given the privileged affiliation with academia, interactions with Vietnamese diaspora community members (elders, peers, and young persons) may come with assumptions and expectations regarding statuses in age, education, economy, and authority. Additionally, none of the authors are fluent in Vietnamese. While the study incorporated embedded interpreters and translators throughout the data collection and analysis processes, we continue to identify assumptions, historical contexts, and language divides that may inform the research process, particularly when interacting with Vietnamese Americans who are considered elders due to hierarchical traditions between youth and elders.

The lead author is the principal investigator of this research in developing the methodology in the context of the community of study, creating the research design, implementing and conducting data collection and leading data analysis. They identify as an American born, non-gender conforming, second generation Vietnamese American, who holds an insider and outsider perspective

Table 1: Workshop demographic data including metadata about each of the 47 workshops.

No.	Date	Location	Count of Participants
1	2024-03-28	Seattle, WA	5
2	2024-04-13	Seattle, WA	2
3	2024-04-20	Oakland, CA	33
4	2024-04-25	Seattle, WA	6
5	2024-05-11	Seattle, WA	4
6	2024-05-19	Seattle, WA	2
7	2024-05-23	Seattle, WA	5
8	2024-05-23	Seattle, WA	3
9	2024-06-08	Oakland, CA	36
10	2024-06-09	Milpitas, CA	5
11	2024-06-11	Los Angeles, CA	2
12	2024-06-12	Irvine, CA	4
13	2024-06-13	Los Angeles, CA	2
14	2024-06-20	Seattle, WA	11
15	2024-06-21	Seattle, WA	60
16	2024-07-13	Seattle, WA	3
17	2024-07-18	Seattle, WA	3
18	2024-08-10	Seattle, WA	3
19	2024-08-27	Renton, WA	3
20	2024-08-29	Seattle, WA	2
21	2024-09-14	Seattle, WA	2
22	2024-09-24	Renton, WA	2
23	2024-09-26	Seattle, WA	4
24	2024-10-05	San Jose, CA	40
25	2024-10-12	Seattle, WA	4
26	2024-05-28	Boston, MA	20
27	2024-10-22	Renton, WA	5
28	2024-10-24	Irvine, CA	25
29	2024-10-25	Orange County, CA	18
30	2024-10-29	Irvine, CA	32
31	2024-11-09	Seattle, WA	11
32	2024-11-19	Renton, WA	9
33	2024-11-21	Seattle, WA	4
34	2024-12-10	New Orleans, LA - Eastbank	11
35	2024-12-11	New Orleans, LA - Westbank	14
36	2024-12-12	New Orleans, LA - Westbank	6
37	2024-12-16	New Orleans, LA - Westbank	13
38	2025-01-28	Renton, WA	3
39	2025-02-25	Renton, WA	2
40	2025-02-19	Houston, TX	22
41	2025-02-19	Houston, TX	50
42	2025-02-20	Houston, TX	23
43	2025-02-08	San Jose, CA	42
44	2025-03-01	San Jose, CA	49
45	2025-04-05	San Jose, CA	44
46	2025-05-01	Hackney, London, UK	30
47	2025-05-03	Deptford, London, UK	42

within said diaspora. The first two authors can understand Vietnamese language but are not fluent. With second-hand proximity to the refugee experience, they can relate to community members

as in-group but are not deeply embedded in Vietnamese American community which carries visible biases for factions within the community. Both authors can be seen as active members of some organizations involved as research participants because the

authors have previously volunteered for and/or supported a variety of local Vietnamese and AAPI nonprofit organizations. The subsequent authors contributed as guidance and resource support for the lead author to engage with the Vietnamese diaspora communities. Neither identify with the Vietnamese diaspora lineage, yet these authors provided theoretical and empirical perspectives from prior research experiences with transnational information communication technologies.

Finally, we acknowledge that these CBPD workshops occurred during a fraught time immediately after the height of a global pandemic and during ongoing U.S. presidential election processes that questioned the trust in academic institutions and government institutions. While we had access to academic resources and professional experiences that privileged our researchers, our aim was to provide community collaborators and participants with equitable compensation for their contributions, as well as favor the community members' voices throughout our works. The research project underwent ethical review through the University of Washington's Institutional Review Board.

4 RESULTS

4.1 Intergenerational Infrastructures of Trust

Co-design with different community types affords pathways to build elements of trust, such as dynamic reciprocity, relationality, and ontologies/epistemologies. There are two types of intergenerational infrastructures that became apparent from CBPD workshops as a methodological approach: inter-organizing and migration waves through age.

4.1.1 Intergenerational Inter-Organizing. The first infrastructure represents multiple generations that each community organization represents, triangulating industries, affordances, resources, expertise, relationships, and perceptions. We estimate a generational distinction between pre- and post-2010s organizing based on the founders of each organization. The older pre-2010 generation includes organizations established and maintained by first generation Vietnamese immigrant/refugee adults with presumably enough social and economic capital to establish an organization to serve community peers and/or are historical institutions.

In an Oakland, California based workshop, founded by “a group for former political prisoners” and now Vietnamese American refugees, they were able to apply and obtain city funds because their founder was a former South Vietnamese military personnel member. With his experience in being supported by the U.S. military, he was able to bring his professional and cultural experiences with Americans to find resources for his resettled community (2025-06-08 workshop memo). On the southeast border of the U.S., New Orleans, Louisiana based community-based organizations included first aid, lawyers, and accountants as organizing leaders who established ongoing community gathering spaces (2024-12-10 workshop memo). Whereas younger post-2010 generation included organizations that are established and maintained by people who are second generation Vietnamese diaspora or identify as Millennial/GenZ, offering contemporary perspectives during workshops and when this article was written, despite being less established than their older

counterparts. The types of organizations and their generational belonging are listed in Table 2.

Every workshop was supported by the triangulation of the practices of the university (older), the initiatives of VFC (younger), and a community journalist (mix of younger/older). Then, we included 1-3 additional community-driven organizations that represent differential generational dynamics—e.g., library or archive (older), senior group (older), mutual aid organization (younger), nonprofit (younger or older). Each of these organizations were established in the context of distinct political, social, and economic needs that were communicated, acknowledged, and discussed throughout all meetings and communications to understand local community norms, expectations, and safety thresholds. For example, the Oakland organization was born out of public charge and social support for refugees within 3 years of resettlement, whereas one of the Seattle, Washington based organizations was created out of business and city development for refugees and their growing families who had been resettled for more than 15 years.

Despite these base variables, due to adaptable relationships [7], particularly in immigrant/refugee communities, we came together to participate in workshop conversations centered on critical analysis about personal stories and online information. Stories shared included gendered perspectives of traditional Vietnamese clothing, political analyses of pre- and post-1975 music, accessibility of translation dictionaries and politicization of dialects, politicized YouTube and Facebook influencers, and more. The capacity to organize workshops with a mixture of perspectives lends to what Kibria has described as “economic patchworking” [21]. The possibility to make these workshops happen not only came from puzzle piecing different socio-economic statuses and access to resources from a financial economic perspective, but also from a social and political economy perspective, in which complex histories could be shared and explained to improve communities' sensemaking of their past, present, and futures that is now heavily mediated by online information.

While we were nervous about incorporating multiple organizations, each with their own goals and needs, these workshops succeeded with the support and reciprocity [43] from collaborations between pre- and post-2010s establishments, representing older institutions/systems collaborating with newer “schools of thought”. In an Oakland workshop a community researcher reflected when “a gentleman who shared his feelings about communism and how communism is not the status of freedom, and [how] he wants the younger generation, i.e. us and those future generations to reclaim Vietnam because his generation no longer has the capacity to do that.” Another community researcher followed this by noting how they felt comfortable continuing the conversation and stretching these beliefs, despite the community researchers' opposing perspectives from the said gentleman because other elders mentioned that it “is a very important to question, [and] that we have to ask ourselves [how do younger and older generation talk about China and communism differently]. And so [the community researcher] felt like that really allowed more folks to share more” (2025-06-08 workshop memo). We fortunately avoided a scenario where there were too many cooks in the kitchen, and instead, we acknowledged each collaborators' generational context through open and regular communication, allowing each collaborator to fully embrace their

Table 2: Types of organizations that collaborated in the CBPD workshops and their generational belonging

Generation	Types of Organizations
Older (established before 2010)	• Public libraries • Universities/Colleges • Senior groups (formalized 501c3, informal groupings, faith-based organizations) • Community orgs (501c3, 501c4, informal, publicly funded, private funds)
Younger (established after 2010)	• VFC • Mutual aid organizations • Community-based nonprofits (501c3 or 501c4) • Journalists embedded in community

expertise and lived experiences in creating the dialogue in each workshop.

4.1.2 Intergenerational Migration Waves and Ages. The second type of intergenerational infrastructure is a more common definition which includes waves of migration and age differences [17]. In each of these organizations, it was imperative that the varied levels of migration and ages from individuals in the Vietnamese diaspora brought their own unique benefit in building trusting relationships to the collective community present at each workshop. The concentric circles in Figure 1 illustrate the levels of involvement of all workshop participants; each role and the intersectional identities they hold unexpectedly unlocked levels of vulnerability, understanding, and consciousness to the process of community members sharing their intimate personal stories and their judgements towards trust and truth of the online information narratives and literacy skills we presented. Within dispelling the personal perspectives in the context of their generational belonging, it was clear that educational background and professional/informal affiliations impacted the ways which trust and willingness to contribute were incorporated into the collective memory of the workshop gathering.

For example, “constituents” (i.e., attending community members, collaborators, participants, interlocutors) of local organizations, led the focus of the conversations in the workshops. In workshop sessions, we started with a local community researcher to share an artifact (physical or conceptual) and memory of that artifact that reminds the community member of their Vietnamese identity. The intent of this first workshop module was to begin gatherings in a personal, relatable, and local common ground while offering an example of an artifact that could be used to bring out *Vietnameseness*. Once the first artifact was shared, the rest of the workshop members were invited to “share a memory about an object that resonates with their Vietnamese identity” similar to what the community researcher just presented. In one such workshop, a community researcher decided to offer up their family surname and its different ethnic counterparts as their artifact, “show[ing] the different ways of assimilation [their family members chose] in order to survive” against a rich geopolitical backdrop between Vietnam, China, and Cambodia, as well as representing their “parents’ ancestry and

ties”. Members began to relate and map their diasporic experiences, anchored by their own artifacts. One attendee recounted their experience living near the border between Vietnam and China and how they view people on both sides as “relatives because they use and rely on the same river and the same lands”. Another attendee shared the story of her parents’ own refugee journey and their desire to “represent her Vietnameseness and Chineseness” by giving her a first name that was “a mixture of Chinese and Vietnamese” despite being born in Hong Kong (2024-11-05 workshop memo). Every workshop, without fail, adhered to this same structure, where members promptly shared in three consecutive segments: (1) where their family came from in Vietnam, (2) how their family left and resettled in their new homeland, and then (3) an artifact that reminds them of their family/home in Vietnam. As researchers, our initial intention and expectation of the prompt was to hear stories that fulfill the third segment, but it was curious to experience every workshop member share parts one through three without a formal solicitation or even hint of parts one and two, regardless of generational age or migration wave. These communities desired to articulate their contexts, i.e. their global origination and journey stories. We discuss the how and why of this desire in 4.2.

In the case of intergenerational infrastructures, there are temporal and interpersonal communication factors. Temporally, these story sharing opportunities required that we scheduled generous time for each CBPD workshops to allow for set up, settling in, workshop and discussion, food, bio-breaks, clean up, and reflection/debrief. The intergenerational nature of the workshops could be similarly depicted through the trope of an immigrant family holiday party. Wherein the start and end times are ambiguous, members will arrive late or linger behind, and a select few will take space to indulge in their storytelling; but in this case, most of the party members indulge in their stories. These workshops became a time and space of “temporal architecture” where the “contours of democratic time” [44] were re-imagined where we could move, talk, and listen on a slower timescale than a traditional focus group discussion, semi-structured interview, or social media data analysis. This allowed for each distinct organization to consider their own and each other’s “political imaginary” [44] by way of accounting for their individual and collective missions and their



Figure 3: A photo of one workshop in Oakland, CA where we matched the community’s temporal needs. Each workshop started with karaoke and dance to Vietnamese ballads as community members gradually arrived to bring joy, embodied creativity, and ease before beginning more serious conversations baked into the workshop curriculum.

need for sustainable, trauma-informed, and collaborative decision-making to address inclusive policy frameworks, participatory policymaking, and prototyping systemic interventions. The first and second authors, being second generation Vietnamese Americans, have lifelong firsthand experience of the temporality of Vietnamese diaspora gatherings, as well as the activities and transitions that afford comfort, ease, openness, and trust building within Vietnamese communities.

This non-verbal understanding and integration of activities, such as traditional food choice, karaoke, comic relief, or symbolic “*li xi*” to solemn topics of discussion, were imperative in creating an intergenerational space together, as seen in Figure 3.

One workshop—where Vietnamese seniors had vocalized their discomfort at some of the topics we had broached—ended with the distribution of symbolic *li xi* (a monetary gift in a red envelope) in the form of gift cards. In the Vietnamese Lunar New Year tradition, *li xi* is an intergenerational exchange of well-wishes and strengthening of relationships, typically given from an older family member to a younger family member. Recognizing the need to invest in community engagement despite increasing community-based research funding cuts, we offered the gift cards out of respect for this intergenerational cultural practice and to reiterate the value of their time and expertise, observing afterward that members were satisfied and more willing to open up through informal post-workshop conversations (2024-10-18 workshop memo). Such non-verbal cultural knowledge was pre-briefed to other researchers, organizers, or interpreters who have not had this lived experience prior to the research workshops.

From an interpersonal communication perspective [4], the social verbal and embodied interactions between workshop members were demonstrated from intergenerational, linguistic, and gendered practices. Across all workshops, it was common to see members who are the oldest in age or those who identified as male, to take a seat in the back of the room, as if they were observing from a bird’s eye view. Many of the middle-aged members, oftentimes younger first and 1.5 generation refugees or middle-aged first-generation immigrants would be dispersed throughout the room, or they would be actively moving around the workshop space, tending to the

food, drinks, and making sure their community members were comfortable. This is a common depiction of feminized practice of care in Western feminist literature. In much of ethnic studies and Vietnamese culture literature, this is interpreted as the matriarchal familial and community hierarchies in many Vietnamese families. Younger members, second generation (Millennials/GenZ) or younger new first-generation immigrants oftentimes grouped together or with their immediate family members (oftentimes parents, aunts, uncles, or grandparents) on their own accord. These geographical groupings dispersed throughout the intimate workshop space spurred conversations about domestic and transnational social media experiences, comparisons between competing historical and contemporary cultural knowledge, and fostered intergenerational reciprocal information literacy.

Both younger and older generation members learned about or revisited historical events that are not accessible in mainstream media, public education, or archival historical records. Older generation members learned about online digital literacy skills while younger generations learned about transnational and multilingual platforms that their elders used for information-seeking. See Figure 4. Both historical account and literacy skills were contextualized to better understand the ways in which misleading content about anti-communist rhetoric are salient and polarizing in Vietnamese diaspora information systems [34].

To investigate this diasporic trust, we co-designed intergenerational infrastructure within community workshops that critically approached community members’ ontological and epistemological perspectives [29] to facilitate sharing of stories about transnational social, political, economic, technological dynamics, to develop communication and means of trust building for local knowledge and cultural heritage preservation practices.

4.2 A Pluriverse of Community Needs

Design justice is a framework and community of practice that analyzes the ways design distributes benefits and burdens between

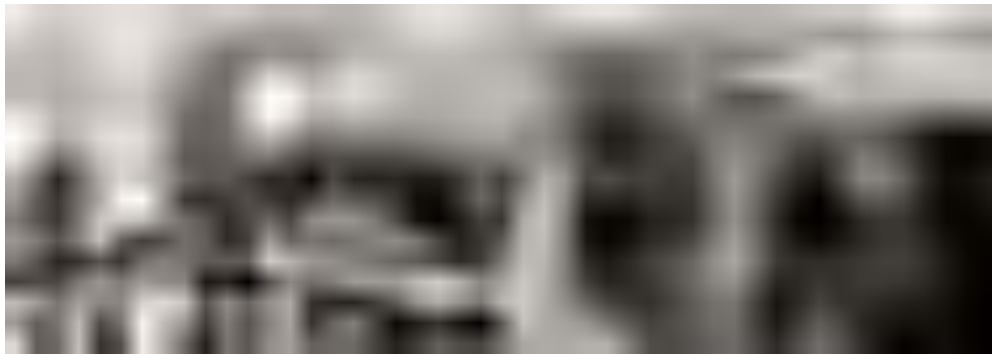


Figure 4: A workshop in Houston, TX where community members sat together in the unassigned seats where most of the younger and older generations faced each other, sitting on opposite sides of the room. There were a couple family groupings in the back of the room where the intergenerational family unit sat together to backchannel amongst each other.

various groups of people and aims to ensure a more equitable distribution of those benefits and burdens [11]. Costanza-Chock emphasizes the community of practice to forefront meaningful participation in design decisions; and recognition of community-based, Indigenous, and diasporic design traditions, knowledge, and practices, which leads us to our CBPD workshop experiences integrating a plurality of voices and intercultural information ethics, as opposed to universal designs [16]. To prevent epistemicide in the design of information infrastructures, particularly as problematic information floods our information diets, these workshops cultivated practices of care for sharing-listening exchanges around difficult stories. Beginning each workshop with a show-and-tell of artifacts, memories, and stories prior to sharing misleading content on social media prevents triggering contemporary, possibly politicized taboo topics, of unprocessed trauma of deeply buried memories. The story sharing set up a common ground among the community members who have diverse lived experiences and have arrived at the workshop from whichever busy lives they live. Our goal was to provide space to communally and actively process stories in relation to their evolving self, each other, within their resettled domestic environments, and with their transnational relationships with their home country.

4.2.1 Taboo Topics. Much of the social media data analysis among Vietnamese diaspora revealed topics that are considered unspoken among community members [30, 33, 34]. Examples of taboo topics include communism, the National flag of the Socialist Republic of Viet Nam, refugee journeys, and the American War in Vietnam (1955–1975). In the past decade, the Vietnamese diaspora story has gained salience in mainstream media [36] but it has been critiqued that much of this has been for the white gaze without addressing these topics among Vietnamese diaspora themselves. Thus, taboos are reduced to essentialized cultural values rather than examined through the affective social processes that make discourses shameful, anxious, uncomfortable, and traumatic to have [31].

At one workshop with a Vietnamese senior community organization that has been actively programming twice per week for more than 30 years, a taboo topic drove community members to redirect the workshop discussions away from anything remotely related to

misleading content on social media and focus solely on the technical aspects of social media. During the story sharing segment, a community researcher, a 1.5 generation Vietnamese immigrant, chose to share the story of a well-known Vietnamese singer Hường Lan as their artifact. Alongside Hường Lan’s fame for her musical ballads that resonate with the refugee experience, she was also notorious for her ability to cautiously navigate political conversations as a public figure. The community researcher reflected on how this was received by community elders at the workshop: “In retrospect [Hường Lan] might have set the tone for them to think that this a little bit more political than what they’re comfortable with and then coupled with two YouTubers, I think that’s where they kind of really thought that we’re here for ulterior motives” (2024-06-21 workshop memo). While we as researchers offered a loose guide of topics to cover throughout the workshop and began the workshops by clarifying that our political and ethical opinions are not our interest or intent, the idea of bringing up any politics triggered distrust. Ultimately, we rerouted the workshop to focus on tools and resources that community members could explore and make use of to debunk misleading content, report misinformation, and detect deep fakes. While this was the only workshop where we skipped most of the information literacy directly related to problematic information in the Vietnamese context, the flexibility of pluriversal inclusion in our CBPD workshops allowed for continued conversations towards co-design intergenerational information literacy.

Another formation of taboo topics appeared through inherent cultural values that descend from trauma created through imperialism, fear of re-severing community bonds, and jeopardizing collective belonging throughout the diaspora. At that same workshop with Vietnamese seniors, one community member, a boat refugee and veteran, expressed their discomfort with sharing their opinions about a YouTube influencer known for spreading misleading content (political and medical-related, admitting to knowing him personally but not wanting to say whether he was good or bad: “I just don’t want to talk about someone” (2024-06-21 workshop memo). Figure 5 depicts the presentation moment which these contentious conversations often arose.

They elaborated that “we are here at the senior center to enjoy each other and not to talk about politics” (2024-06-21 workshop



Figure 5: In this workshop in San Jose, CA, this image depicts one common moment in each workshop where a local facilitator (i.e., community researcher and/or interpreter) would present a Vietnamese YouTube influencer. The facilitator would survey the room through a raise of hands to understand who is already aware of the influencer’s channel. Then we would discuss the strategies that the influencer used to spread misleading content to their viewers and followers.

memo). Their refusal illuminates how open discussion of pluriversal politics transgress community norms that prioritize building interpersonal relationships [52], a sentiment also echoed by a participant from another workshop who felt that politics jeopardized community bonds. That is, this is an example of a refusal for the expression of pluriversal views [23], particularly in the context of individual and communal survival and fear due to immigrants and refugees’ history of lived experiences of negative consequences for speaking from precarious social positions. In reaction to the community’s refusal, the senior association’s founder and lead organizer comforted her constituents and the community environment by reiterating that “one thing we have to learn as a community. We have to, essentially, blend in with the environment. Wherever you’re at, you have to recognize that you have to act accordingly”, inspiring a round of applause from the room (2024-06-21 workshop memo). The fear of precarity and survival was contextualized and acknowledged through refugees’ resettlement experiences, re-instilling comfort and trust for the workshop to continue forward. Our design efforts were tested in this environment and required for our research design to reiterate intent, goals, motivations, and community interests with leaders of the community organizers to set mutual expectations between researchers, designers, facilitators, and constituents.

4.2.2 Trauma-Informed Processing of Deep Memories. In historiography and designing archival narratives, deep memories recognize the division between memory (i.e., what is remembered) and history (i.e., what happened), which strengthens fissures between the expertise and knowledge of historians, archivists, and survivors (subjects in the narratives) [57]. To prevent topics from becoming taboo for survivors, Young advocates for history, and our research argues for the designing of archives and information systems, to “include both the voice of the historian and the memory of survivors” [57] from their personal traumatic experiences. Trauma-informed participatory design focuses on qualities of inviting participant

involvement to their personal preferences and temporalities [46] which are guided by safety, trustworthiness, transparency, peer support, collaboration, mutuality, empowerment, voice, choice; and cultural, historical and gender issues [13, 54]. Throughout the CBPD workshops, we learned a trauma-informed community of practice to support intergenerational, multilingual collaborators as they shared their pluriverse of deep memories in a communal space.

In an example of trauma-informed sharing, a community researcher shared how she learned from her father’s ways of building resilience. She recounted how her father reframed their family’s forced migration experience of fleeing political and natural disasters into adventures during her childhood. He transformed moments of potential distress into moments of joy and shared resilience between parent and child. Collaborators at the workshop were enlightened and surprised to learn that their peers had the ability to recognize and remember moments of resilience alongside the sorrow. The opportunity of this practice within the CBPD workshop lends to the HCI design concept of critical fabulation and design speculation [14, 41, 63], in which the notion of sensemaking in the face of problematic information can be generative and supportive for a collective community by way of affect [58] instead of from incomplete facts. The openness to explore these stories lends toward inclusive decision-making and participatory transformations among communities who distrust state-governed policy making.

Trauma-informed design appeared through the co-design process with community facilitators and community researchers prior to the workshop session. As the facilitator co-designed the story and memory to share with the group, they learned about their agency and capacity to revisit trauma. He described how in the process of preparing his artifact, its history, his memory of it, and translating his story from English to Vietnamese, he was able to revisit an “internal struggle that [he] never recognized... being able to have some sort of leadership... that I can present this and that



Figure 6: Photographed by Lexi Potter, March 6, 2017 courtesy of the International Examiner archives, a Seattle-based ethnic news outlet [19]. Community members, family business owners, organizers, and students peacefully rallying outside of the City of Seattle Council Chambers in reaction to the city claiming community participation in policymaking but doing the opposite. Seattle’s Little Saigon community was the first and primary community who collaborated and hosted our CBPD workshops [64].

I was able to express how I felt and my memories” (2024-10-05 workshop memo). This level of empowerment, voice, and choice aligns with trauma-informed design qualities to support people within immigrant and refugee diaspora to build capacity to engage with and trust the process with participatory policymaking as seen in Figure 6.

Lastly, we acknowledge the significance of CBPD workshops as an avenue to validate collective memories, particularly those that might not be represented in mainstream media narratives. These workshops became a moment in time where community members could examine an example of problematic information on YouTube or Instagram together, then share their process of sensemaking in the context of their cultural memories. This became a practice of bridging their local to transnational knowledge systems to make sense of political and medical related problematic information.

The long history of imperialism between China and Southeast Asia is a historical narrative, ancestral lived experience, and present-day pervasive sentiments that has led to widespread problematic information about anti-Chinese Communist Party (CCP) in social media among, not just the Vietnamese diaspora, but many other Asian American communities [2]. While much of the Vietnamese diaspora, who joined the CBPD workshops, did not directly experience Chinese imperialism, the affect carries through their ancestral knowledge and contemporary transnational information networks, which calls towards a disaggregation of pan-Asian design and a disaggregation of community specific contexts to provide inclusive, participatory, and sustainable decision-making design processes.

Every single organization we partnered with expressed a problem in which Vietnamese people have been couched under East-Asian identities through their access to resources, such as public

charge, space/land use, education and culture heritage programming, etc. The facilitators (local community organizations and their constituents) shared with us the precarity of their access to resources because many organizations that have access to and/or maintain public and private funding sources have been historically led by East Asian community members. The community leaders and facilitators we were in contact with were careful to note that they did not want to follow a scarcity model in the non-profit industrial complex but that they were concerned about “pan-Asian non-profits” and would like to see more direct action to support diasporic-specific. The inter-ethnic critiques lend to deep memories of historical transnational and nationalistic identities that these members of the Vietnamese diaspora contend with, knowing that Chinese or Japanese imperialism was a lived experience of their ancestors, but the memory still lingers in their bodies and organizing infrastructures [1].

The progression of story sharing and culturally relevant connections to information literacy, design policy, and our scholarly findings of social media data analysis mediated taboo topics and trauma-informed processing of deep memories in a communal setting. This is a type of design justice practice to encourage pluriversal perspectives across generations in the Vietnamese diaspora. We sought to explore this intervention to address the lack of impact from multilingual translated fact-checking articles alone and collaborators, facilitators, and community members expressed the need for more of these experiences. It is our intent to imagine and activate CBPD workshops that solicit these interpersonal communication relationships to provide long-term and sustainable transformation of sharing traumatic stories that have been invisibilized by symbolic annihilation, or the absence or misrepresentation of marginalized communities’ stories in mainstream media [9, 50].

5 CONCLUSION

We argue for the design process to build trust through intergenerational infrastructures and inclusion of a pluriverse of community needs. Through CBPD workshops in cities across the U.S. with immigrants and refugees in the Vietnamese diaspora, we co-designed, shared stories, played, and discussed the unspoken to identify the values and processes that are needed to develop CBPD with/by/for immigrants and refugees who require multilingual programming. We identify the multi-level of expertise and relationships within/without community needed to serve communities that rely on transnational information systems for trustworthy information.

Two key CBPD practices have been identified. First, in the intergenerational infrastructures of trust, we prioritize a trauma-informed practice. The trauma, stemming from socio-political and historical lived experiences, for many immigrants and refugees include a transnational to local experience. From their migration journey to their resettlement, and now back to their home through online social media platforms. The return to home incites complex deep memories and our workshops engage in peacebuilding efforts considering controversial ties to home and host countries and their long histories of imperialism and militarization disinformation campaigns. Through a trauma-informed framework, we fostered

Table 3: Actional Design Principles for each practitioner type based on each of the recommended CBPD practices

Practitioner	Intergenerational infrastructures of trust	Temporal affect
Designers	Provide activities (e.g., spaces or platforms) for participation, communication and collaboration [65] to identify demographics (i.e., generation migration) and to integrate generational preferences into design choices.	Integrate multiple temporalities while designing the schedule of activities, considering characteristics such as generations, socio-cultural traditions, and trauma.
Communicators	Provide transparency and multilingual communication (i.e., trans-language dialects, accessibility from scientific to colloquial) of information. [66]	Integrate phrases (particularly empathetic in-language diction) that afford care and prevent re-traumatizing community members. [68]
Policymakers	Support disaggregation of data and that which in-forms policies to support target populations for social service and public charge programming. [67]	Humanitarian settlement programs can be funded, developed, and maintained by community liaisons and practices that forefront psychological distress and trust building.

resistance, cooperation, resilience, and conflict resolution that forefronts local and ancestral knowledge through cultural practices and open discourse. Yarker has proposed these intergenerational practices from the lens of “geographies of everyday” which lends well to the growing interest in preserving historical immigrant communities, like Little Saigon’s [55].

We also identified the need to forefront temporal affect through prioritizing pluriversal perspectives before universal design. In the AAPI community and across many diasporas, they are not a monolith, and it is becoming increasingly important to disaggregate programs and designs to contend with culturally specific needs of each diaspora. Trans-language is one temporal future research opportunity and design practice to make use of linguistic design choices to engage with different dimensions of socio-political histories, attitudes, ideologies, and experiences [66, 69]. Our work grew from the fact that translated fact checked online media was not sufficient in preventing the spread of problematic information and to contend with information literacy issues. Through CBPD workshops we can foster cultural empowerment and trust in multilingual and diaspora communities, particularly in the face of problematic information and institutional distrust.

Finally, we offer design system tools that researchers, designers, resource providers (i.e., community organizations), and policy makers can use to regain trust from communities who are made up of immigrants, refugees, multilingual literacy, and transnational networks. See Table 3 for actionable practices based on design principles relevant for practitioners such as designers, communicators, and policymakers. All these practices are relevant for scholars as they proceed through research and knowledge production lifecycles.

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Participants on Participation

Agonistic PD processes and implications for epistemic authority, mutual learning, and participant gains

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Abstract

This paper further develops *design for equivalence* (DFE), an approach to participatory design (PD) to prioritize systematically excluded individuals and groups and their matters of care, while drawing together relevant expertise to address social injustices. An explanatory embedded multiple case study was conducted to explore what less powerful actors gain by engaging in collaborative processes of design and how practices and processes do or do not support their epistemic authority and matters of care. Thematic analysis suggests how collective information gathering and sharing practices—mutual learning and learning—affect participant gains and resultant design process responses, expanding PD research in these areas. Empirically rich cases establish the need to further refine DFE principles. Findings contribute to ongoing discussions in PD about power, individual and social outcomes, affective rewards, and epistemic authority when designing with and for systematically excluded individuals and groups toward just coexistence.

CCS Concepts

• Human-centered computing; • Participatory design;

Keywords

Mutual learning, Evaluation, Agonism, Health justice, Worldbuilding approach

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1 Introduction

The ways in which people are or are not—aware, able, eligible, invited, required, supported, willing, and/or forced, among other conditions—to participate in the procedures or experiences that constitute worldbuilding activities—from voting, policymaking, or designing algorithms, technologies, products, programs, services,

interventions, infrastructures, systems, or ecosystems, among other things—that affect their lives—is a central issue of our time. It demands careful consideration and is of great consequence as to whether worlds are equitable, sustainable, and just, so that all people have free and equal standing and a real opportunity to belong and flourish, especially when thinking about design to promote dialogue, peace, and just coexistence.

Accounts describing the procedures, experiences, and results of design processes are typically produced by those who organize and implement them—students, professional practitioners, and academic researchers or scholars. These accounts very rarely, if ever, come directly from participants. We do not hear if or how procedure affects their experience, or if it democratizes decision making. Nor do we hear, if and how procedure and experience, when taken together, affect the results of design processes and whether the latter include, integrate, and/or prioritize the lived experiences, knowledge, and matters of care of participants. When design is explicitly concerned with equalizing power relations and democratizing decision making within design processes—including, for example, the PD tradition—we believe the commitments for how participation is imagined, organized, implemented, measured, and/or reported—require different accountabilities, especially when these processes aim or claim to address social, political, and/or economic inequalities. In instances when those with less positional power or those historically excluded by the structures and systems of oppression participate in design processes that seek to equalize power relations and democratize decision making, the literature largely omits their first-hand descriptions, observations, feedback, or analysis.

PD theory and practice actively engage with the theoretical and practical applications of Mouffean agonism [3–5, 10, 14–21, 32, 34, 42, 47, 56, 57]. This paper continues recent discussions on the Mouffean concept of “chain of equivalence” to expand on the coexistence of participants and designers in the accounting of design processes by reporting on an explanatory embedded multiple case study. Thematic analysis suggests how the structures of collective information sharing and gathering practices—mutual learning and learning—affect participant gains and design process outputs, expanding the body of research in these areas. The paper contributes to ongoing discussions and debates in PD scholarship on addressing power imbalances in PD processes, and it adds to research about individual and social outcomes, affective rewards, and epistemic authority in the context of working with and for systematically excluded individuals and groups. Findings provide an empirical basis to refine the provisional *design for equivalence* (DFE) principles [23] for PD processes to challenge structural inequality and create articulations of the common good strong enough to counter power.

*This paper was adapted from the first author’s dissertation [24] with additional analysis to refine findings in Section 6 and to inform Sections 7 and 8 drawing on generous feedback from the second author and the reviewers. Following the CRediT taxonomy, the second author has been involved in Writing – Review and Editing.



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2 PD, Participants' gains, and Design for Equivalence

Despite PD ideals, PD research rarely explores what participants gain through their participation in design processes or their views of processes and outcomes [8]. In a literature survey by Bossen, Dindler, and Iversen [8], an initial search yielded 143 papers, with only 13 meeting selection criteria for explicit, systematic evaluation of PD processes. Nine of the evaluations were summative, focusing on process and accomplishments, and the remaining four were formative to guide ongoing PD projects. The authors concluded that existing evaluations had not taken “the core values of mutual learning, empowerment, and democratization into consideration as an explicit purpose” [8, p. 159], noting project participants were not included in the development of evaluation criteria, and only a few studies included them as respondents.

In an extensive literature review by Teli, Tonolli, Di Fiore, and D'Andrea [67] about the contemporary trajectories of PD relative to the relationship between design and participation to mitigate social, political, and economic inequalities, “participant gains,” were one of four constructs examined. Of the 102 journal articles and conference papers analyzed, very few contributed to a deeper understanding of participant gains beyond benefit of the technologies created to improve quality of life. When articles focused directly on PD processes, tangible outcomes and artifacts were highlighted at the expense of a discussion of individual or social outcomes of the process. The review [67] also identified numerous studies on learning by participants that suggested participation is intrinsically beneficial. Of studies focused on participation, the study by Bossen, Dindler, and Iversen [7] on impediments to user gains was highlighted as the most in-depth as it described how differing project aims and conceptions about technology between users and designers caused frustration for users. In sum, PD literature does not sufficiently evaluate the political implications of PD, nor does it include a comprehensive discussion of participant gains along different dimensions such as collaboration, increased freedom, affective rewards, or any structural or political changes at community or institutional levels more broadly [67].

2.1 Pluralistic agonism and design for equivalence

According to Ernesto Laclau and Chantal Mouffe [43, 44], marginalized and disadvantaged groups pursuing counter-hegemonic aims should formulate “chains of equivalence” (COE), that is, coalitions of allied groups seeking extensive transformation of existing power relations. Groups that form a COE have their own relation to the existing hegemony with the experiences and interests of each group distinct from those of the other groups. Despite these relational differences, groups can act together through an “agenda of equivalence” because they are equally disadvantaged by existing power relations, just not in the same way [43, 44].

The theoretical constructs of COE and agendas of equivalence are helpful for considering how individuals, groups, and organizations pursuing a specific counter-hegemonic goal might collaborate through PD processes as a form of coalition (i.e., COE) to identify and advance agendas of equivalence [23]. In a Mouffeian formulation, a COE must be comprised of groups equally disadvantaged by

the hegemony, because it is this characteristic that creates democratic equivalences across groups [43, 44]. This formulation does not allow for more powerful actors who are not equally disadvantaged by hegemony to participate.

In response, a theoretical approach has recently been suggested, *design for equivalence* (DFE, [23]), wherein collaborating actors, who may be not equivalently disadvantaged in relation to the hegemony, commit to PD processes that prioritize the issues and matters of care of less powerful actors marginalized by hegemony to conceptualize responses to attend to these issues and matters. Here, agonism is framed as a permanent provocation external to participatory processes of design, creating a symbolic space internal to PD processes for less powerful actors to articulate counter-hegemonic interpretations of the common good [23]. This move extends the COE beyond the Mouffeian formulation and aligns with the evolution of PD to “collective design” that is shaped through “designing with” diverse and interrelated human and more-than-human actors [37, 48, 60].

Drawing on data from two empirical cases this paper will further develop and refine the original provisional principles of DFE [23] that stated PD processes must:

- Center and continually prioritize systematically excluded individuals and groups.
- Align lived experiences, situated knowledges, and expertise in service to an agenda of equivalence.
- Be agnostic about design outcomes early in the design process.
- Engage members of the chain of equivalence in conducting design research.
- Deliberatively build the capabilities of systematically excluded individuals and groups.

In a nutshell, this paper is motivated by two complementary research questions: How do the DFE principles perform empirically? Do they need revision?

3 Methods

This study used an explanatory embedded multiple case study [71] design to explore the perspectives of young people participating in design workshops organized by an academic research center at the University of Chicago (UChicago) in Lucknow, Uttar Pradesh, in India, and Chicago, Illinois, in the United States (Figure 1). In an embedded design, subunits are nested within the main unit [71]. The main unit of this case study was the design workshop. The subunit of analyses were the perspectives and participant gains of young people participating in the design workshop. The rationale for selecting an explanatory embedded multiple-case study design was driven by four characteristics. First, it allows for comparison of similar and/or contrasting results [45]. Second, the findings and interpretations offer greater depth and are more compelling than a single-case design [33]. Third, the results are first described individually, contributing to a contextualized understanding of the issues, and then the results are synthesized across cases [54]. Lastly, the use of multiple lenses, rather than a single case, enhances the understanding of the phenomenon [71].

(ASRH) or learning about sexual and reproductive health (SRH) and/or design, not because they had a specific personal experience of SRH (e.g., abortion, contraceptive uptake, sexually active, pregnancy, etc.), or were, for instance, a top student at their school. The UChicago and Illinois Institute of Technology Institutional Review Boards (IRB-2022-65, IRB-2023-16) approved all study procedures.

3.2 Data analysis

Audio recordings of the focus group discussions (Lucknow and Chicago) and individual interviews (Chicago) were transcribed verbatim. The Lucknow transcripts were translated from Hindi to English by a third party. Transcripts were verified for accuracy and de-identified. Thematic analysis was used to analyze each case separately [63]; for analyses see [24, p. 109-187]. Open coding was used to compile data into smaller analytic units. Next, the codes were used to generate categories. Constant comparison was used to identify similarities and differences [63].

Next, cross-case analysis and synthesis of the similarities, differences, and patterns across the two cases were conducted to produce knowledge easier to generalize. To identify similarities and differences across cases, constant comparison was used between all forms of qualitative data collected for each case to interpret findings [63] which are presented below in Section 5.

4 SITUATING THE CASES

These cases were part of a larger body of research conducted by the Center for Interdisciplinary Inquiry and Innovation in Sexual and Reproductive Health (Ci3) at UChicago. Focused on adolescents, women, and communities of color, the goal of Ci3 was to develop new research methodologies, evidence, intervention strategies, and novel solutions to advance health and well-being. For analytic parity, the cases are bounded to two-front end PD workshops that were part of Ci3's longer-term efforts to make SRH and gender equality interventions with and for adolescents. The workshops were organized by in two cities: Lucknow and Chicago, both briefly described below.

Lucknow is situated in Uttar Pradesh (UP), India's most populous state, home to 19.3% of all Indian adolescents ages 10-19 [13] suggesting that interventions focused on ASRH could be relevant. Other regional factors supported the study rationale. UP ranks 34 out of 35 on the gender development index [38] and in the lowest quintile of all Indian states for girls' enrollment in secondary school [70]. The region's literacy data indicate only 45% of young women can read compared to 75% of young men [39]. Women comprise a mere 15-16% of UP's labor force, ranking again in among the lowest percentages in all Indian states [70]. Nearly 21% of women aged 20-24 years in UP report being married before the age of 18, despite laws prohibiting marriage before this age [39]. Almost 18% of women ages 15 to 49 have an unmet need for family planning, and only one-third use any modern method of contraception [39]. These disparities intersect to create systemic challenges to the health and well-being of women and girls.

Chicago, the third largest U.S. city, is consistently ranked as one of the most segregated American cities [1]. High levels of segregation based on race and class stratify access to education and

Figure 1: Explanatory embedded case study

3.1 Data collection

Data collection for this study included the selection of sites and participants. Focus group interviews and semi-structured interviews were conducted. Documents and artifacts related to workshop planning, implementation, and follow-up were collected. Community-based PD workshops were considered sites. Cases were selected using purposeful sampling for information-rich cases for in-depth study [53] as it is rare for design approaches employed in health services and public health, to employ problem-driven design processes that are not bounded by a pre-defined solution [27], and that engage those most affected by the issue being addressed in the process as design partners in all phases of design [27]. Moreover, it is uncommon for these approaches to engage young people marginalized by race, class, gender, and gender identity [41]. As a final note, compared to the PD perspective involving participants with a specific form of power or expertise—for example, specific professional groups [6] or social groups deemed to be capable of social transformation [66]—this study recruited adolescents who were interested in improving adolescent sexual and reproductive health

Table 1: Data collection

Study site	Lucknow, Uttar Pradesh, India	Chicago, Illinois, U.S.A.
Recruitment method	Through 3 established, youth-engaged social impact NGOs	In-person outreach to youth-engaged community organizations and a selective enrollment school
Participant eligibility criteria	Ages 15-24, male or female, residing in urban slums of Lucknow	Ages 14-19, residing in or attending school in a South Side Chicago community area
Recruitment materials	Highlighted innovation, teamwork, and skills building transferable to SRH or gender equality work, business, or community development	Invited young people to a summer design challenge focused on creating SRH services for Chicago teens
Workshop design	Structured innovation approach (54 hours over 3 weeks)	Five 3-hour sessions (15 hours over 5 weeks)
Compensation	~\$45 USD for workshop participation and \$5 USD for focus group participation	\$35 USD per session, \$20 USD for focus group, and \$25 USD for 6-month follow-up interview
Participant enrollment	31 total (22 girls, 9 boys)	32 total ^a

^a Sex at birth and gender identity information were not included in the research protocol.

other public services, opportunities for social interaction and employment, and health outcomes [1, 12]. Although adolescents are relatively healthy, the American Academy of Pediatrics suggests regular preventative medical care should include SRH care [28]. However, data indicate that most adolescents and young adults do not receive preventative medical care, with even less receiving SRH care [36]. Inequalities in the distribution of infrastructure (e.g., transportation, housing, hospitals) have a heightened effect on teenagers from low-income communities of color who often lack the time, money, and autonomy to seek medical care [35]. Moreover, studies indicate Black, Latinx, and low-income adolescents and young adults continue to experience medical mistrust, biases, and coercion that affect the access, provision, and uptake of contraceptive care [26, 58, 62]. However, evidence suggests that among adolescents who receive SRH, those who experience patient-centered care are more likely to discuss their concerns with their clinician and select and continue to use a contraceptive method [52, 68].

4.1 Goals and format of the workshops

Both workshops were organized to privilege the issues and matters of care of adolescents marginalized by their social, racial, ethnic, gender, sexuality, and/or economic status. Both involved the active collaboration of Ci3 at UChicago as the lead institution, philanthropic funders, non-governmental organizations (NGOs), young people, and a variety of community members and collaborators.

In Lucknow, a 15-day workshop, framed as human-centered design (HCD) and totaling 54 hours, sought to engage young people as equal partners in a HCD process to create novel and locally relevant interventions to mitigate gender disparities and improve ASRH. The workshop federated a group of individuals and organizations allied in: 1) the belief that all individuals have a right to medically accurate information about their bodies and SRH; 2) achieving gender equality; and 3) a desire to explore and improve gender and ASRH with and for young people.

The Lucknow workshop structure was informed by two theoretical frameworks—positive youth development (PYD) and PD.

PYD is a framework that recognizes the potential capacity and strengths of young people as they actively develop confidence, knowledge, and agency to achieve future goals [11]. When applied, it seeks to build or strengthen relationships with adults and social networks, to develop the skills necessary to engage in real-world roles and activities, as well as to orient youth to future goals [11]. The guiding principles of PD—having a say, mutual learning and co-realization—inform how the workshop structure and activities supported positive youth development [40]. Having a say was incorporated by 1) introducing participants to HCD as a problem-solving approach through didactic and activity-based modules; 2) the use of a HCD process by participants to explore gender and ASRH issues in their surrounding community; and 3) the development of low-fidelity prototypes that incorporated learnings from the field and the unmet needs and desires of participants. Mutual learning was built into young people’s collective engagement with the workshop content and activities, as well as interactions with their peers, design coaches, NGO and UChicago staff, as well as the individuals and organizations they encountered while conducting interviews and participant observation. Lastly, the prototypes young people co-designed with their coaches were eligible for pilot funding through the main study and, if funded, would be further refined, piloted (i.e., design-in-use), and evaluated over a six-month period by the partnering NGO.

Hiring professionally trained designers to co-facilitate the Lucknow workshop was not feasible due to budget constraints and related logistical concerns. Instead, the UChicago team asked partner NGOs if they would be amenable seconding one to two staff members to serve as design coaches for the workshop. In return, staff members would receive a two-day, crash course in HCD and serve as co-facilitators for the workshop, with day-to-day guidance before and during workshop sessions from UChicago team. This approach not only provided an opportunity for NGO staff to learn and practice new skills that could be applied to other NGO workflows, and it also positioned NGO staff to play a pivotal role in the implementation of a pilot for their team’s workshop concept if it was awarded pilot funding.

Table 2: Comparison of the cases

Dimension	Lucknow	Chicago
Primary aims	Draw on lived experience and try new HCD skills to surface ASRH matters of care; create initial prototypes of relevant interventions	Draw on lived experience to generate adolescent-friendly concepts in the context of a pediatric MHU servicing local high schools
Length and structure	Longer engagement (54 hrs.) in NGO-based teams	Shorter engagement (15 hrs.) in loosely structured groups
Cultural and socio-political context	Conservative context around sexuality, gender, and youth voice	Liberal context around sexuality and gender; people aged 13 or older can receive sexual and mental health care without parental permission
Language and translation	Multi-lingual context with emphasis on Hindi facilitation with Hindi HCD primer; abbreviated English HCD guide produced to train NGO coaches; participants noticed, used, and preferred the English version	Shared linguistic register
Facilitation	NGO-based coaches (non-designers), a professional designer (first author), and a UChicago researcher	Directive facilitation from professional designers (including first author) with varied levels of professional experience and types of design expertise
Participants at baseline	Limited or no exposure to sexual health education and unfamiliar with HCD	School-based sexual health education; some participants exposed to HCD in school
Agenda-setting power	Initial topics developed from previous UChicago research with Lucknow adolescents (n=277) as a starting point for teams; two teams matched to second choice topics	Bounded to a pediatric MHU serving local public high schools
Forms of participation	HCD process served as an explicit framework for teams to learn, conduct community-based research, ideate, prototype, and present proposed interventions	Activity-based individual and group reflection; MHU-based research; individual and group ideation, prototyping, and presentations
Data collection	Immediate post-workshop focus groups by NGO design coach from a different team	Immediate post-workshop focus groups and six-month, semi-structured interviews conducted by UChicago research staff not involved in workshop delivery

In Chicago, acutely aware of the impact the legacy of segregation and systematic oppression, the goal of the workshop was to: 1) decenter the expertise of designers and healthcare providers; and 2) collaborate with adolescent Chicagoans marginalized by race, gender, sexuality, class, and/or age as experts of their experience to understand how to improve ASRH based on their day-to-day concerns, aspirations, and needs. The workshop was imagined as a starting point of a longer-term effort to explore and design interventions with and for young people. Informed by a PD ethos of having a say and mutual learning, the workshop sought to: 1) establish a safe, collaborative, and generative environment for young people to reflect on their own experiences, engage with and learn from their peers, as well as professional design practitioners and healthcare providers; 2) support exploration and learning around health, well-being, and sexual health and the contexts of care; and 3) create the conditions to support young people in the prototyping of low-fidelity ideas to for adolescent-friendly care. The workshop was a first step toward a long-term, regular co-design practice with

Chicago adolescents which took the form of a Ci3 youth advisory council in the following year.

Like the Lucknow workshop described above, the Chicago workshop was informed by PYD and PD. The five-session, fifteen-hour workshop series sought to engage participants as experts of their experience in a loosely configured HCD process organized in two phases. The first phase relied on a variety of individual and group co-design activities. At midpoint, the workshop shifted from reflective and future-oriented creative activities to focus on the more concrete aspects of clinical care from individual and socio-ecological standpoints. Here, the HCD process was introduced to participants as something that had been happening experientially in the background that participants might more concretely draw upon during their interactions with a pediatric mobile health unit (MHU) care team and environment.

Figure 2: Workshop formats

5 CROSS COMPARISON OF CASES

This section reports on the cross-case analysis and synthesis of participant perspectives and gains from the Chicago and Lucknow workshops. Themes and insights from the cross-case analysis of workshops are described below and will be used in Section 6 to determine how the provisional DFE principles, originally derived from critical reflection on an existing case and research-in-progress [23], perform empirically and if they require revision.

5.1 Theme 1: Agenda-setting and having a say

Lucknow and Chicago workshop data offer different perspectives about how participants experienced agenda-setting and the degree to which they had a say. In Lucknow, formative data from an earlier phase of the main UChicago study about the lived experiences and worldviews of adolescents from life course interviews [49], body mapping [50], a narrative-based game workshop, and story circles [30], were analyzed to locate relevant topic areas to explore in

the design workshop. These topics were described in innovation intents used as a starting point for the workshop, functioning as tentative agendas for participant interrogation. When introduced, the intents were situated in the context of recent research with Lucknow adolescents. Unlike the Chicago workshop data, the topics of agenda-setting and workshop goals did not explicitly come up in the Lucknow focus groups. A Team 1 member indicated, “I felt the workshop was about our own issues and problems” (S1), a feeling mirrored by other Lucknow participants.

In retrospect, the innovation intent selection process offers another view into agenda-setting relative to the respective participant interests in contrast to those of the UChicago team. The innovation intents represented six topics and teams were asked to rank in order of preference. The ranking process ensured coverage across all topics to support UChicago’s mutual learning goal. However, because UChicago determined the process, two teams did not match with their first choice and were assigned to their second choice.



Figure 3: Participants on agenda-setting and having a say

If teams had focused on their first choice, it would have meant that two teams would have focused on rethinking gender roles, and two teams would have also focused on gender equality in high school completion rates. As a result, the topics of healthy bodies and healthy relationships, and public safety for girls would not have been explored. Had teams been able to select any topic, the workshop may have more fully reflected the agendas of the individuals, teams, and NGOs in the room. The outputs of PD workshops represent another form of agenda-setting in design. Though the topics were pre-defined at the beginning of the Lucknow workshop, workshop outputs were not. In this way, the Lucknow workshop was problem-focused and solution agnostic.

Though the Chicago workshop also used a problem-focused approach to explore SRH, outputs were bounded to the context of a pediatric MHU; this constrained participant agenda-setting in two ways. First, it limited the exploration of SRH-related topics that were relevant and perhaps more important to adolescents but might be associated with other clinical contexts (e.g., mental health, abortion care). Second, it limited exploration of other SRH-related topics relevant to adolescents outside of the context of clinical care (e.g., how to communicate with a sexual partner, pleasure). At a higher level, one participant felt the workshop agenda was not defined by participants and recommended that in the future, a “default agenda” could serve as a starting point and then participants could decide, “how we would want it to go and what we should change” in response (male participant, FG2).

5.2 Theme 2: Mutual/learning, collaboration, and building common ground

The length, structure, and activities of the Lucknow and Chicago workshops varied, yet the informational aspects of the workshops built common ground among participants, often challenging the common ground in the external social environment. Originally situated in discrete workplace interactions, mutual learning was described as “encouraging and enhancing the understanding of different actors by finding common ground and ways of working” [40, p. 33]. This conceptualization relied on the rationale that users of technology knew most about the domain and context of use for embedding activities into new technological systems [9]. More recently, PD that foregrounds both “mutual learning” and “learning,” henceforth represented as “mutual/learning,” in the context of infrastructuring, suggests that mutual/learning expands participatory, experimental, and learning-focused worldviews and practices [22].

By engaging Lucknow adolescents as co-researcher/designers, the UChicago team deliberately sought to privilege their lived experiences and knowledges to subvert typical power imbalances between adolescents and adults, gender, ethnicity, socio-economic status, and differences in language. The design process was imagined as a framework for inquiry and response, with the goal of identifying ways to address disparities in SRH and gender. Reflecting on their experience workshop, this participant shares:

“I wondered what the environment and the people over here would be like. I had those doubts. Then I

came here and, now today, it is the last day, so I am feeling a bit weird now as I felt as if I belonged here. It did not feel like I was at an unknown place, it felt like it was my own organization, and these were my own people. I really liked it here and learnt a lot.” (Team 6, S1)

Another Team 6 member indicated the workshop gave them a chance to bond with other adolescents who belonged to the same NGO because, “we did not know each other that well. So that gave us a sense of belonging” (Team 6, S5). Participants across teams mirrored this sentiment, a Team 1 member shared, “I felt the workshop was about our own issues and problems. The workshop was organized to solve our problems” (S1). These accounts illustrate how adolescents connected with each other through shared issues.

Lucknow focus group data suggest participants made gains related to mutual/learning in four areas, from developing confidence by talking with allied strangers about stigmatized topics freely, without judgement, and gaining first-hand access to SRH information; to learning how to work as a team using HCD, with learning how to interview and interviewing people as experiences participants liked best overall. At a higher level, these gains relate to practices of information gathering and sharing. Here, it can be useful to draw on Olúfemi O. Táíwò’s [65] notion of common ground. By engaging workshop participants as actors, rather than “users” of process outputs, the workshop sought to redistribute social resources and power. And, by making SRH information accessible and usable in a mixed gender environment, data indicate that workshop practices of information sharing and gathering were strategically useful to supporting reproductive justice and gender equality in the room and the design process. Invoking Táíwò’s [65] metaphor here, rather than navigating the rooms that history built, the workshop aspired to build a new room where adolescents from Lucknow, local NGO staff, public health professionals, and a designer, could actively collaborate in worldbuilding. Táíwò suggests active collaboration is driven by practices of information gathering and sharing is how a constructivist politics builds common ground and creates epistemic authority among collaborators [64, p. 5], while also challenging the common ground external to it [65].

In Lucknow, as participants moved through the different design process phases, the ground shifted beneath them. They shared information and perspectives and added things to the common ground. Teams used what they were learning to challenge and reshape common ground and to inform the responses they created to counter dominant paradigms around SRH and gender equality. Information from the workshop was also shared by participants in the other contexts of their lives, challenging and adding to common ground elsewhere.

The Chicago workshop aimed to decenter the expertise of designers and healthcare providers and foreground adolescents as experts of their experiences. Unlike Lucknow, Chicago combined the use of co-design methods with learning and conducting design research in the context of SRH care as provided on a pediatric MHU. Some SRH information was presented by a partnering organization, but participants noted it was redundant, and they desired different, more in-depth information. Chicago participants describe their experience with this combination of approaches:

Female Participant: That’s when they were making sure you talked to people. I talked to some of public health people, like that doctor. The head of the place. Then it seemed like that’s when it started to be a problem-solving type of thing.

Female Participant: You need things like that at the beginning. You need the space. The little games and stuff to establish a connection, but I just felt like they were stretched out.

Female Participant: I have to agree. In the beginning, I was like, we’re not really developing solutions for the mobile health unit. Towards the last few sessions, we actually started to get into it. I still like how we started out doing the babyish, and creative, and fun things. I liked how all of the sudden, all of that was related to actually solving problems in the real world. How they actually did all of that fun stuff, and there was a point to it.

Facilitator: Getting there was taking a little instead of two weeks and boom. Do you think you might lose people in two weeks if it just continued, or was it okay? If we did this again, do you think somebody would be like I don’t want to do this?

Female Participant: No, because it was fun.

(FG3)

This account suggests the Chicago workshop format was confusing. The sudden shift from discrete, reflective co-design activities completed in pairs, to collaborating with an ad hoc team, might partially account for differences in the characteristics of gains between workshops. In Lucknow, gains have a relational quality to them as they primarily revolved around talking to strangers, learning new things, and then applying what was learned to issues related to ASRH and gender equality as teams. Whereas, in Chicago, gains were primarily at the level of individual knowledge; this included, for instance, correcting personal misconceptions about birth control, decreasing personal stigma around seeking sexual health care, and changing expectations for one’s own SRH care. Very few Chicago participants noted the workshop experience improved their problem solving or collaboration skills. In Chicago, when gains were relational, they tended to be located at a one-on-one level, for instance, this participant shared, “Most of the topics we discussed are topics you normally don’t talk to people individually on. It was nice sharing and understanding other perspectives about the topics and stuff. I really liked that about the program” (6MFU_09).

Unlike Lucknow, the Chicago workshop did not offer as expansive an opportunity for direct contextual inquiry by participants with a range of related stakeholders. However, the brief encounter with a pediatric MHU made some aspects of SRH care more concrete. One participant describes the experience:

“Actually, when we got on the [MHU], we learned more about IUDs and my mom told me to never get the IUD, ever, because she thought it was some type of huge contraption. Once we saw it, it was really very small. We got to see the physical representations of



Figure 4: Chicago participants conducting design research on a pediatric mobile health unit (MHU)

these birth control methods, feeling the little implant in your arm. A lot of my friends were trying to get different birth control methods, and we were nervous about the size, shape, and feeling, but we learned more about that.” (6MFU_01)

This account shows a moment when participants were in conversation with each other, other people, and the situation, adding information to the common ground.

Totalling 15 hours over five weeks, the Chicago workshop was approximately one-third of the time of the Lucknow workshop which totaled 54 hours over three weeks; with less frequency, Chicago participants had limited opportunities to get to know and work with each other. One participant shared, “we just started knowing each other’s names in the fourth week and then the fifth week, it was time to go. I probably would want to have more sessions” (FG5, S?¹). A review of Chicago planning documents indicated time was not allocated to introductory activities as a larger group at the beginning. Rather, rapport was established informally and through co-design activities within ad hoc teams. Unlike the Lucknow workshop, Chicago participants did not have the chance work deliberately as a team, which left some participants feeling less connected to others in the room and the design process.

¹Use of “S?” indicates the transcript did not specify a speaker because the audio was indecipherable.

5.3 Theme 3: Situated knowledge, contextual research, and expertise

The constellations of first-hand knowledge and experiences and the types of design and co-design research activities differed between Lucknow and Chicago informing the nature and scope of resultant responses. In both cases, participants described a variety of experiences with the concept generation phase. In Lucknow, the first attempt failed while the second gained traction. To better understand this phase from each Lucknow team’s perspective, each focus group interview was reviewed and triangulated with the themes each team generated from their interview data, the how-might-we questions they generated from the themes, and the final intervention descriptions each team proposed. Next, similarities and differences across teams were compared.

The Lucknow cross-team analysis suggests all teams related what they learned during their interviews in their intervention ideas, perhaps despite the attempts to use structured methods to generate many ideas. They also drew on their own lived experiences, though the data do not make explicit when and how their experiences factored into decision making about how to organize interventions or their goals. In retrospect, this would have been a good question / line of inquiry in focus groups. The data uniformly suggest that interviewing was a rich and powerful experience for workshop participants who engaged their peers and more powerful actors in their community, which built their confidence and a sense that they could play a role in social change. Workshop data collection and analysis presented an opportunity for participants to explore different perspectives and orient them across socio-ecological levels—individual,



Figure 5: Participants on mutual/learning, collaboration, and building common ground

interpersonal, community, and policy. Lastly, the data show some of the moments when teams relied on the structure of the design process and its methods, tools, and practices, plus support from their coaches. In sum, the practices of information gathering and sharing situated teams before the concept generation phase, unlike some ideation approaches that rely solely on imagination or creativity, which “have an ethos that can be exclusionary to communities that have historically faced systemic discrimination” [29, p. 2].

In Chicago, concept generation was directly connected to participant experiences during simulated mock patient visits on a pediatric MHU. As described in the case-specific analysis [24, p. 151-187], due to time constraints, workshop facilitators drafted “How might

we....?” questions for their groups in between the session when participants visited the MHU and the next session when participants brainstormed ideas based on their experiences. Participants mention how some of the how-might-we questions drafted by facilitators did not accurately reflect what aspects of the clinical care experience they felt needed improvement or were currently absent. Given how-might-we questions define the boundaries for idea generation and therefore the boundaries of potential futures, data suggest participant must author how-might-we questions, *not facilitators*.

In both workshops participants suggested more expansive and in-depth coverage and discussion of SRH topics important to them,



Figure 6: A Lucknow team’s second attempt to generate ideas based on the design research they conducted

which may have differed from those workshop organizers prioritized. Both groups also called for a greater emphasis on male reproductive development and anatomy and perspectives and indicated they would have liked to include more people with topic-specific expertise as presenters or research respondents to further inform their project. In Chicago, participants felt including peers from other neighborhoods than their own would have helped to make their proposed interventions more relevant and generalizable. In Lucknow, participants felt including peers from rural villages was important because they did not have the same opportunities as urban adolescents to learn about SRH.

6 EMPIRICAL PERFORMANCE, REVISION, AND REFLECTION

In this section, drawing on the above analysis, we discuss how the provisional DFE principles perform empirically and reflect on post-workshop design activity to determine if there is a need for revisions to DFE principles.

6.1 Begin with response agnosticism

The cross-case theme on agenda-setting and having a say suggests an agenda of equivalence can be bound by an issue or set of issues in front-end PD workshops. However, to act in concert with less

powerful actors through an agenda of equivalence, the adoption of a solution-agnostic stance is ideal toward embracing the most expansive interpretation of the PD principle of having a say. These data support the provisional DFE principle, “Be agnostic about design outcomes early in the design process.” However, these cases suggest that outcomes (e.g., what is made) are not the only aspect to be treated with openness and agnosticism. Therefore, we suggest the use of design “responses” instead of “outcomes” (or “solutions”) to account for the dynamic character of the work, care, maintenance, repair, and design-after-design activities of human and more-than-human actors essential to the practices, interventions, and systems, proposed by design processes. With this small refinement, we revise the first DFE principle to: **Be agnostic about design responses early in the design process.**

6.2 Build new rooms with collective mutual/learning practices

The cross-case analysis suggests the quality of mutual/learning and collaboration in front-end PD processes are influenced by: 1) the deliberateness of teaming, that is, the ways allies federate around a matter of care together; and 2) explicit, collective practices of information gathering and sharing. The analysis indicates that mutual/learning is at its most relational when less powerful actors feel



Figure 7: Participants on situated knowledge, contextual inquiry, and expertise

safe and have time—time to learn about the perspectives of others in the room, to actively discuss and consider an issue together, to share their own expertise and learn about the expertise of others in the room, to invite more allies into the room, and to talk to strangers outside of the room. The data suggest when all these activities are considered together, they work to create a sense of belonging and build common ground and democratic equivalences. The kind of collective transformation through PD processes is consistent with Mouffeian “identification politics” [51, p. 40] as well as “becoming with” as described by Yoko Akama [2].

Theme 2 data connect to two provisional DFE principles, including “engage members of the chain of equivalence in conducting design research,” and “deliberatively build the capabilities and capacities of systematically excluded individuals and groups.” The data suggest that how less and more powerful actors engage with information together is essential and affects the quality of individual and collective collaborative experience and epistemic authority. Circulating information, when combined with the lived experiences of people in the room transforms the collective as they work together: everyone is changed. Considering the data, the provisional principles have an us/them distinction where some actors are doing with/to other actors that does not fully recognize the fullness of mutual/learning across all actors engaging in the PD process together. As Táíwò reminds us, moving forward, our very ability to live and flourish together will be determined by the new rooms we build and the quality of the common ground we create together within them [65, p. 42]. With these considerations in mind, we propose a revised second DFE principle: **Allied individuals and groups must be deliberate in how they learn about and from each**

other and the issue they seek to address together through collective practices of information gathering and sharing.

Though these cases relied on a combination of formal and informal socializing and design research strategies, methods, tools and practices—co-design activities, participant observation, intercept interviews, subject matter interviews, concept generation, prototype making and testing—it stands that any practices that aim to build common ground and establish democratic equivalences from other traditions, disciplines, geographies, or worlds could be used. Additionally, in keeping with the spirit of the provisional principles, part of being “deliberate” in collective practices must involve supporting the participation of less powerful actors as the effort demands—emotionally, financially, materially, physically, socially, or otherwise—as their participation should not be at a personal cost.

6.3 Align in service to an agenda of equivalence

The cross-case analysis suggests that directly engaging with people and contexts relevant to the topics young people sought to address was an important opportunity for personal development and informed the ideas generated within teams or groups. Young people desired to expand the types of expertise included in the workshop, ranging from the geographic diversity of peers as workshop participants and research respondents, as well as inviting more subject matter experts to better inform research and idea generation.

Theme 3 connects to two of the provisional DFE principles—“center and continually prioritize systematically excluded individuals and groups,” and “align lived experiences, situated knowledges, and expertise in service to an agenda of equivalence.” In the data,

we see a serious commitment to seeking out a variety of perspectives and expertise—from less and more powerful actors alike—by less powerful participants in the PD process. It is the synthesis of what is learned from those interactions that dynamically establishes an interpretation of a counterhegemonic common good. So, rather than “centering and continually prioritizing systematically excluded individuals and groups,” we suggest privileging their matters of care in the design of responses. Based on these considerations, we propose the third DFE principle: **Draw together situated knowledge, expertise, and contextual research in service to an agenda of equivalence that privileges the matters of care of less powerful actors.**

6.4 Insider researcher reflection: Privilege matters of care in existing rooms

Workshops are generative—usually producing many concepts that may or may not be developed depending on how they align with, expand, or challenge an institution’s current mission and existing resources. Sometimes, workshop concepts are not developed but serve as powerful ideas about potential futures that challenge common ground in the other rooms where they are subsequently raised.

In both cases, workshop outputs embody discrete agendas of equivalence, that is they point to the ways that adolescents would like the world to be organized. Time, resources, scope-related constraints or conditions, and participant availability in the face of existing school, home, and work responsibilities bounded the workshops. Participating adolescents were only temporary members of larger, loosely formed alliances organized through UChicago. A brief account of how workshop concepts travelled to new rooms follows by one of the authors, an insider researcher, to illustrate how agendas of equivalence were or were not continued, or evolved, by allied individuals or groups.

6.4.1 Lucknow. Following the workshop, partnering NGOs could apply for pilot study funding for the interventions proposed by adolescents. Five of the proposed interventions were funded and subsequently refined, implemented, and evaluated over a six-month period. For example, the social media literacy and improving gender completion workshop interventions were connected to a social impact NGO focused on gender equality. They continued to work with 43 adolescents to evolve the proposed gaming center into a social media literacy tool for peers which the evaluation indicated improved knowledge about relevant laws and increased willingness to act against cyber bullying. Overall, the pilot studies provided an opportunity for NGOs to implement youth-informed interventions in real-world conditions to change the social and structural factors that impact youth. More than 125 adolescents were directly involved in the further development of the pilot studies, with an additional 221 adolescents engaged during the implementation phase.

In addition to the knowledge generated from the NGO pilot studies, UChicago synthesized learnings to inform the design of a school-based intervention to provide information about SRH to Indian adolescents through animated stories, graphic novels, and games. To create the final version of the intervention, UChicago

partnered with Indian design and curriculum experts and community organizations to iteratively prototype the tools and curriculum. More than 150 young people and 50 educators in different Indian government schools provided input with the goal of creating an accessible format for adolescents. The intervention was tested in a randomized control study in 100 Indian government schools.

6.4.2 Chicago. Following the Chicago workshop, the UChicago design team analyzed what they learned from workshop participants. This reflective work was translated into a set of meta-design principles that sought to define adolescent-centered SRH care from the perspectives of workshop participants. In retrospect, it would have been worthwhile to member check the meta-principles with participants and refine.

The meta-principles were used as a jumping off point for a series of seven idea generation sessions (one for each principle). A different group of people were invited to each session depending on the focus and included, for instance, UChicago youth advisory council (YAC) members; clinicians from obstetrics and gynecology, pediatrics, adolescent health, and infectious disease; public health experts; researchers working on LGBTQAI+ health, adolescent mental health, and SRH; among others. Sessions generated approximately 70 discrete ideas which were further evaluated in two separate sessions—one with the UChicago YAC, the other with clinicians—to determine what ideas were worthwhile to co-design. Both groups ranked “Cards on the Table,” an intervention to spark question asking between adolescents and their clinicians as their top choice. Later renamed “Let’s Chat” by the YAC, the intervention was informed and refined through iterative prototyping that include 10 iterations of content, 17 different physical prototypes of form factors, and 140 unique prototyping sessions with more than 109 young people and 32 clinicians [25]. It was evaluated in a National Institutes of Health study, and the results have been submitted for publication.

Of Chicago workshop outputs, a tangible contraceptive counseling tool spoke distinctly to how adolescents wanted to discuss birth control with clinicians. They wanted to see and touch all of the commonly used birth control methods as a way to learn about what is available and how methods work in the body—all of which improved adolescent contraceptive knowledge, busted myths they might have, and helped them explore what method might work best for their bodies and day-to-day lives while mitigating clinician bias during counseling. The UChicago design team pitched the tool to leadership and secured the resources needed for iterative prototyping with local adolescents, clinicians, and an industrial design partner. Now known as “Hello Options,” the tool is publicly available and has been purchased by clinicians and sex educators in 48 states and Canada. A small study suggested the tool is useful, feasible, and an acceptable decision aid for adolescent-centered contraceptive care; patients reported the tool helped them better understand how contraceptive methods work in the body; clinicians reported the tool helped young people take a more active role in their decision making; and, clinicians and patients indicated the tool supported adolescents in making more informed decisions [46].

In Lucknow and Chicago, a commitment to continued engagement with adolescents as ideas from workshops were iteratively

prototyped, refined and, in many instances made real, was essential to staying accountable to their agendas and to countering dominant paradigms that affect them. In the context of a design practice that aims to *design for equivalence*, less powerful actors may not always be in the room, and it is the responsibility of more powerful actors to remain accountable to them. Therefore, we propose a fourth and final DFE principle: **More powerful allies must continually privilege the issues and matters of care of systematically excluded individuals and communities in the context of their collaborative work together.**

7 POTENTIAL LIMITATIONS

The first author conducted the study as an insider researcher. Case study methodology often benefits from insider status because it provides deeper access to people, issues, and data [69]. Insiders may better understand power dynamics, gain research permissions, and access participants and documents. In this study, insiderness also enabled direct contributions to the research site and to disciplinary and practice-based knowledge. However, insider research carries risks: reliance on personal experience may reduce impartiality, role duality may limit attention to alternative interpretations, and familiarity may lead to unexamined assumptions or overlooked behaviors [31, 55, 59, 61]. These concerns informed reflexive practices throughout data collection and analysis.

Cases were selected to enable theoretical replication rather than similarity. Cross-case differences were analytically useful for examining how contextual conditions shaped mechanisms through which PD practices influence participant experience and the development—or nondevelopment—of epistemic authority. “Confounders” were treated as rival explanations rather than variables to control. Key mediating factors included facilitation, relational structures, and artifacts. In Lucknow, confounders included economic precarity, postcolonial knowledge hierarchies, facilitation authority, and translation practices. In Chicago, confounders included professional credentialism and routinized participation. Across both sites, institutional priorities, agenda-setting constraints, and differing data collection practices shaped whether participation translated into durable epistemic authority and complicated cross-case comparison.

8 CONCLUSION

In this paper we have built upon studies on participant gains, mutual learning, and power to revise DFE principles to incorporate what we have learned from less powerful participants in PD processes that seek to prioritize their matters of care in the design of counterhegemonic responses. We now offer empirically rich, refined principles to attend to equivalences in collaborative processes of design, these include:

- **Principle 1:** Be agnostic about design responses early in the design process.
- **Principle 2:** Allied individuals and groups must be deliberate in how they learn about and from each other and the issue they seek to address together through collective practices of information gathering and sharing.

- **Principle 3:** Draw together situated knowledge, expertise, and contextual research in service to an agenda of equivalence that privileges the matters of care of less powerful actors.
- **Principle 4:** More powerful allies must continually privilege the issues and matters of care of systematically excluded individuals and communities in the context of their collaborative work together.

The DFE principles open new avenues for how knowledge is negotiated, contested, and co-constructed in PD processes by situating participation within politically charged and epistemologically plural spaces. In a broad sense, the DFE principles are relevant to design practice and research concerned with redistributing social resources and power in service to equitable and just futures. More specifically, relative to PD for health justice, these cases add to the scant literature on problem-driven approaches not bounded by pre-defined solutions that engage those who are the least powerful and most affected by the issues being addressed as partners in all phases of design.

We acknowledge that this is far from being a comprehensive account of how equivalences may be established in PD processes to challenge social and structural inequality and create articulations of the common good strong enough to counter power. In the spirit of agonistic pluralism, future research may continue to extend, transform, or dismiss the revised DFE principles proposed here.

More recent collaborative work has allowed for the socialization of the revised principles with other researchers and practitioners. These early interactions have been heartening as they suggest the principles can be practically employed. Yet, at the same time, discussions indicate that selecting approaches, processes, theories, methods, practices, and/or tools for PD processes that seek to establish equivalences can be challenging. Future research is required to better understand what design approaches, processes, practices, methods, and tools—or combinations of the latter—constitute PD processes that durably establish the epistemic authority of less powerful actors to create equivalences.

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Framing the conversation on Democracy and Participation along six structural gaps to reach democratic resilience

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Abstract

This positioning paper introduces the contributions to the conversation on Democracy and Participation in the light of a triple socio, technical and green transformation. Building on the European Commission Joint Research Centre's identification of interrelated threats to democratic resilience, the paper argues that democratic legitimacy increasingly depends on how digital and civic infrastructures are designed, governed, and institutionally embedded. It singles out six structural gaps to reach democratic resilience: (i) the deliberation–scale–impact dilemma; (ii) the redistribution of epistemic power through AI mediation; (iii) the infrastructural politics of platforms; (iv) the fragmentation across digital, urban, and environmental participation; (v) the development and uneven distribution of democratic competencies and collective agency; and (vi) the persistence of project-based participation over durable participatory infrastructures. On this ground, it maps the selected contributions as situated interventions against these gaps, indicating how participatory design can operate to address and mitigate them.

CCS Concepts

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design; • **Computing methodologies** → Artificial intelligence; • **Information systems** → Information systems applications; Collaborative and social computing systems and tools; • **Social and professional topics** → Computing / technology policy; Government technology policy.

Keywords

AI-Enhanced Deliberation, Participatory Design, Digital Participation, Digital Democracy, Socio-Technical Governance, Civic Technologies, Digital Future

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1 State of democracy under triple socio-technical transitions

Worldwide, democracies are undergoing a period of structural strain, with liberal democracies operating under sustained pressure: declining trust, polarisation, institutional fatigue, and a perceived democratic deficit [11]. In this wider landscape, policy debates in Europe and elsewhere increasingly recognise the urgency of re-connecting citizens to policy-making processes, particularly under conditions of digital transformation [9].

Earlier this year, the European Commission's Joint Research Centre (JRC) conducted a scoping study that combined systematic literature review, expert workshops, and empirical mapping to explore future challenges of democracy. The results are ten inter-related threats to democratic resilience [32] that include declining citizen trust, representation gaps, erosion of democratic norms, fragmentation of the public sphere, epistemic uncertainty, institutional weakening, and short-termism in political decision-making. Importantly, these threats unfold across multiple levels indicating that democratic strain is not confined to electoral politics, but embedded in the broader socio-technical ecosystem within which democratic life is organised. While derived from a European policy context, these challenges also resonate with broader transformations observed across democratic systems, and can be treated as analytical lenses whose relevance depends on specific institutional, cultural, and geopolitical conditions.

1.1 Setting the ground of ongoing transformations

Central to this reflection is the recognition that digital technologies are not neutral tools but structuring forces that reshape the conditions under which public deliberation, participation and policy-making occur [20]. Platform architectures, algorithmic curation, data infrastructures and AI systems increasingly mediate what becomes visible, credible, and actionable in public discourse. The public sphere itself is no longer only a communicative space but a digitally structured environment more and more governed by technological logics and infrastructural constraints.

Beyond digital transformation, democracies are simultaneously undergoing a profound green transition. Decarbonisation strategies, energy-system restructuring, climate adaptation policies and new infrastructural investments are reconfiguring economic models, urban development, and everyday practices. These changes are not independent of digitalisation. Energy grids depend on digital control systems; data centres require substantial energy

and water resources; urban sustainability strategies rely on sensor networks and algorithmic optimisation; climate governance increasingly draws on predictive AI modelling. The digital and green transitions are therefore deeply intertwined and cannot be treated as separate domains of governance.

Yet, a third and equally significant shift is underway: a transition in democratic governance itself. This governance transition reflects the growing complexity of socio-technical systems, the acceleration of information flows, and the distribution of power among the (human and non-human) actors.

This triple (social, green and technical) transformation is therefore simultaneously socio-cultural and distributive: it reconfigures everyday practices, civic expectations, institutional roles, and the legitimacy claims through which public decisions are justified. It reshapes infrastructures, redistributes power, and redefines the conditions under which democratic participation takes place. In so doing, the interaction of digital, green, and governance transitions also generates structural tensions: between optimisation and pluralism, efficiency and legitimacy, short-term responsiveness and long-term foresight.

These tensions affect the foundations of democratic trust in institutions, in knowledge-producing actors, and in the fairness of decision-making processes. At the same time, the convergence of these transitions opens possibilities for reimagining democratic processes in more inclusive, adaptive and reflexive ways. In this sense, the ongoing transformations are technological and institutional, and also transformations in democratic culture, shaping how problems are framed, whose knowledge counts, which futures are deemed plausible, how costs and benefits are allocated across communities, and how trust is built or eroded within socio-technical systems. As these transitions reconfigure the civic-material environment, from neighbourhoods to transnational governance networks.

If democracy depends on shared spaces of reasoning, institutional accountability and inclusive participation, then the public sphere should be understood as a sociotechnical environment – one that is designed, governed and continuously reconfigured to be socially aligned. Public and political discourse no longer takes place in physical spaces but within hybrid environments, in which the governance of digital infrastructures intersect with everyday public governance. In this broader sense, there is a paradigm shift in what is meant by “space”: from a physical environment to the socio-material environment where digital systems, institutions, and citizens intersect.

The Democracy and Participation conversation of PDC 2026 offers the possibility to debate within this setting. In this positioning paper, we provide the required general background, delineate open challenges (in the form of six gaps to be addressed) and position the related contributions to the conversation as situated responses to these challenges.

1.2 Methodological approach

To provide the analytical frame for this positioning paper, we adopted a structured qualitative synthesis across three inputs: (i) the JRC scoping report on future challenges to democracy and related Commission analyses of technology and democratic resilience

[32]; (ii) key scholarly strands on deliberative democracy, participatory governance, participatory design, civic technologies, and AI governance; and (iii) the accepted contributions to the conversation on Democracy and Participation.

First, we conducted a thematic synthesis of the literature to identify recurring tensions in how participation, deliberation, and legitimacy are shaped under ongoing transitions. Through iterative coding and clustering, these tensions were consolidated into six “structural gaps” that capture persistent capability deficits (deliberative, epistemic, infrastructural, integrative, civic, and institutional) rather than isolated design problems.

Second, we mapped each contribution to the conversation on Democracy and Participation to the gaps through a structured deductive coding process. Each paper was analysed using a common coding scheme derived from the six gaps previously identified, which functioned as predefined analytical categories. For each contribution, we examined (i) the primary participatory problem addressed, (ii) the level of intervention (e.g., infrastructural, institutional, epistemic, or capacity-building), and (iii) the mechanisms proposed to support participation or democratic engagement. Based on this analysis, papers were associated with one or more gaps, noting their main analytical focus. To ensure consistency, the coding was applied iteratively, comparing interpretations across papers and refining category boundaries as a consequence. This mapping is not aimed at strict classification, rather at identifying how each contribution engages with specific structural tensions and where overlaps, complementarities, or divergences emerge. In this sense, mapping is used as an analytic device to support comparative discussion within the conversation rather than as a fixed taxonomy.

2 Theoretical Background

2.1 EU democratic resilience as a socio-technical policy project

In European policy debates, civic participation, transparency, and the responsible use of digital technologies have been progressively positioned as conditions of democratic resilience and institutional trust [9]. While this section draws on the EU as a policy reference point, the dynamics described are not limited to European contexts but reflect broader transformations in how digital infrastructures and participatory practices are reshaping democratic governance [11, 20, 25, 26]. This orientation builds on a longer science–society trajectory in which legitimacy is increasingly linked to involving citizens and civil society not only in policy-making but also in research and innovation trajectories [29]. In this policy framework, digital systems—now including AI—are treated as infrastructures that mediate civic and institutional interaction and therefore ask for governance approaches that align with inclusiveness, accountability and human oversight, not just on paper. As a result, EU programmes increasingly treat democratic participation itself as an object of experimentation: participatory methods, AI-supported deliberation tools and socio-technical configurations are tested in real-world settings, seeking to scale engagement while retaining legitimacy and trust. European-funded projects, such as ORBIS (GA:

101094765) and NEUROCLIMA (GA: 101137711), exemplify this orientation, experimenting with AI-enhanced deliberation through co-creation processes embedded in existing participatory ecosystems [21]. These initiatives highlight how policy-level commitments to democratic resilience are translated into socio-technical experimentation in real governance settings. In this sense, the co-chairing of this conversation by representatives of the JRC and a research initiative engaged in AI-enhanced deliberation reflects a broader convergence between institutional democratic risk analysis and participatory design practice.

Against this backdrop, and linking to analyses of evolving governance paradigms [24] and technology's disruptive effects on democratic life [20], the recent European Commission work [8] argues that digital technologies have become decisive conditions of democratic functioning. Both platform architectures and algorithmic choices shape what becomes visible, and thus credible, and politically salient in the public sphere, while attention-economy incentives privilege emotionally charged content and intensify polarisation. The same analysis emphasises that democratic resilience cannot be secured through individual-level responsibility alone. Rather it requires systemic reform across enforceable standards, public oversight, data rights, and investment in decentralised alternatives, alongside stronger science-policy interfaces and rapid evidence capacity [8]. In this framing, digital technologies are explicitly double-edged: they can amplify misinformation and manipulation when left to market logics, but they can also support participatory governance and knowledge translation if embedded in accountable institutional arrangements [8].

In parallel, a growing body of research examines the emergence of civic technologies - digital platforms, AI-enhanced tools and infrastructures designed to facilitate citizen engagement, deliberation and co-production in public governance [22]. Civic technologies range from open data platforms and participatory budgeting tools to AI-supported deliberation systems and urban co-design applications [6]. While often framed as innovations in democratic participation, their actual impact depends on institutional embedding, socio-cultural context and infrastructural design choices. Civic technologies therefore sit at the intersection of digital transformation and democratic reform, and constitute a key area in which participatory design intervenes.

2.2 Participatory design as infrastructuring in socio-technical democracies

If democracy depends on shared spaces of public reasoning and deliberative exchange [7], as well as institutional accountability and inclusive participation in the generation of public value [17], then today's public sphere needs to be understood as a sociotechnical environment—one that is designed, governed and continuously reconfigured. Public and political discourse increasingly unfolds within digitally mediated environments where algorithms rank visibility, platforms structure interaction, and data infrastructures mediate what becomes accessible to institutions. Furthermore, contemporary scholarship in participatory design and science and technology studies shows that publics are constituted through infrastructural arrangements and technological mediation rather than existing independently of them [27].

It is within this reconfigured civic environment that participatory design becomes critical. Not simply as a method for co-creating artefacts, but as a way of shaping the infrastructures, processes and epistemic architectures through which democratic life unfolds. This claim is reinforced by recent scholarship on participatory cities, which explicitly challenges the assumption that digitally instrumented environments should be governed through optimisation logics. Helbing et al. [16] argue that society should not be governed as a machine and that data-driven optimisation is insufficient for complex civic environments where legitimacy and pluralism are at stake. Instead, they propose participatory cities as socio-technical systems organised around co-creation, self-organisation and bottom-up coordination, where digital tools support collective learning and pluralistic decision-making rather than replacing politics with cybernetic control.

This position resonates with socio-technical transition theory, which conceptualises societal systems as co-evolving configurations of technology, institutions and cultural practices [14]. From this perspective, governance outcomes emerge from multi-level interactions and cannot be reliably steered through centralised control alone. Decentralised collective learning approaches similarly demonstrate how digital infrastructures can facilitate bottom-up coordination while preserving pluralism [28].

2.3 Deliberation, scale, and the limits of procedural participation

Deliberative democracy theory has long emphasised reason-giving, pluralism and structured public debate [7, 12]. Yet empirical evidence repeatedly identifies tensions between deliberative quality, participatory scale, and institutional embedding [19]. Fischer [10] highlights how deliberative spaces are culturally structured and politically consequential, shaping whose voices are heard and whose knowledge is legitimised. When digital infrastructures structure these spaces, the design of socio-technical systems becomes inseparable from democratic legitimacy. In parallel, Landemore [19] formulates this as a central democratic dilemma that questions how systems can expand inclusive participation without sacrificing epistemic rigor.

Empirical research also shows how institutional design mediates participatory outcomes. Deliberation should be embedded within policy cycles, supported by transparency, feedback loops and administrative responsiveness in order to produce tangible impact [1]. Nevertheless, many participatory processes remain consultative rather than transformative [30], and representation gaps persist—particularly for young people, minorities and socio-economically marginalised groups [32]. The difficulty, therefore, is not just at the participation levels, but concerns the infrastructural conditions under which participation unfolds. Important considerations include: who structures the space, how are contributions aggregated, and how are they translated into institutional action?

2.4 AI mediation, epistemic authority, and socio-technical governance

AI further complicates the situation: AI systems growingly mediate how information is generated, structured, summarised and amplified, reshaping epistemic authority and public reasoning [31]. At

the same time, AI is increasingly embedded across public governance systems [23, 31]. Governments are now simultaneously governing algorithms and governing by algorithms [18]. This dual role generates a structural tension. AI promises efficiency, prediction and optimisation, yet democratic legitimacy requires transparency, contestability and participatory oversight [15]. Yet, AI systems do not merely automate administrative tasks. They reshape epistemic authority and reorganise public reasoning [31]. Platform architectures influence what is seen and amplified, recommender systems shape exposure to political information, and generative models introduce new forms of narrative production. In this environment, participation is no longer only about inclusion in deliberation, but about inclusion in the design and governance of the infrastructures that structure deliberation.

Participatory design offers a political and infrastructural framing capable of addressing these shifts. Still, scholarship warns that participation in AI development often remains tokenistic, consulting without redistributing authority or effectively engaging [30]. Buhmann and Fieseler [2] therefore call for “deep democratic” governance of AI, embedding technological innovation within deliberative systems rather than isolating it in technical domains.

This concern also aligns with emerging augmented democracy approaches that experiment with decentralised and participatory digital infrastructures, with examples of blockchain-enabled mechanisms for democratic participation in smart-city contexts [28]. Rather than treating computation as a mechanism of optimisation or automation, recent socio-technical transition scholarship emphasises that digital systems require to be understood and framed as embedded within the co-evolving configurations of institutions, cultural practices and governance arrangements [14]. From this perspective, digital infrastructures can act as enabling conditions for participatory governance. Nevertheless, research on digitalisation in urban co-design shows that technologies do not automatically enhance participation. Their democratic value depends on how they connect data, users and societal issues in context-sensitive ways [5].

Across these strands of research, a common concern emerges. Democratic aspirations for inclusive, reflexive and pluralistic participation are not matched by stable sociotechnical arrangements capable of sustaining them.

3 Open challenges

Despite the growing recognition that democracy is now deeply entangled with digital and green transitions, and that participatory processes should operate within sociotechnical infrastructures rather than alongside them, the literature remains fragmented in how it conceptualises and operationalises required changes. Several structural tensions persist. They concern the design, governance and long-term embedding of participatory processes within digitally mediated civic environments. And this conversation seeks to address them. For the more detailed gap analysis that follows, it is important to understand one essential distinction. The notion

of “public participation” is often treated as attendance in a predefined process. Instead, “public engagement” refers to broader, relational and lifecycle forms of co-shaping that extend across agenda-setting, design, deployment and evaluation - precisely where socio-technical choices and power relations are configured. This distinction matters for the mapping that follows, because several gaps concern not only who participates in a deliberative moment, but also how publics can shape problem framing, system architectures, governance rules, and evaluation across the lifecycle of civic technologies and socio-technical transitions.

Gap 1. The deliberation-scale-impact dilemma

A first persistent challenge concerns the structural tension between deliberative quality, participatory scale, and institutional impact. Deliberative democratic theory foregrounds reason-giving, pluralism and reflexive dialogue [7], yet empirical research consistently shows that participatory mechanisms struggle to translate citizen input into durable policy outcomes [13]. Landemore [19] formulates this as a fundamental dilemma: How can democratic systems scale inclusive participation without sacrificing epistemic rigor? Similarly, JRC also reports that participatory processes remain under-embedded and insufficiently integrated into governance systems [32]. The unresolved question is not simply how to increase participation numerically, but how to design infrastructures capable of sustaining high-quality deliberation while ensuring institutional responsiveness.

Gap 2. AI mediation and the redistribution of epistemic power

A second challenge lies in the ambiguous role of artificial intelligence within democratic processes. AI-based tools for clustering, summarisation, argument mining and explanation promise to address information overload and support deliberative understanding although it keeps meeting constraints [22]. However, scholarship shows that algorithmic mediation reshapes epistemic authority, visibility and normative alignment [31]. Participation in AI governance frequently remains consultative rather than power-sharing [30], leaving unresolved how citizens can meaningfully influence the socio-technical decisions—data selection, system architecture, aggregation logic and governance rules—through which deliberative dynamics are structured. The gap therefore concerns not only inclusion in deliberation, but inclusion in the design and governance of deliberative infrastructures themselves.

Gap 3. Platform architectures and the politics of digital infrastructure

A third challenge concerns the infrastructural character of digital platforms and information environments. Platform architectures and recommender systems now function as political actors, shaping visibility, amplifying polarisation and influencing public discourse [8, 20]. Policy debates around digital sovereignty and AI regulation recognise this structural power [18], yet remain largely detached from participatory design interventions at the architectural level. The literature emerges lacking a coherent account of how participatory design can engage with the deeper logic of digital infrastructures - beyond interface design - to address systemic issues such as algorithmic amplification, attention economies, and the concentration of infrastructural control.

Gap 4. The fragmentation between digital, urban and environmental participation

A fourth challenge emerges from the fragmentation between digital governance research, urban–environmental participation scholarship, and institutional reform debates. Studies of AI in government often focus on administrative systems, algorithmic optimisation and service transformation [4, 23], while urban planning and sustainability research emphasise spatial participation, community engagement and environmental attention [3]. Yet under the triple transition context, these domains increasingly converge in practice. Yet, this material convergence is not matched by a corresponding convergence in participation theory or governance design. Research and practice too often remain fragmented and siloes. The unresolved challenge is therefore not simply interdisciplinary coordination, but the development of participatory approaches capable of operating coherently across intertwined socio-technical systems and informing the governance transition itself.

Gap 5. Democratic literacy and collective agency in AI-enhanced environments

A fifth unresolved challenge concerns the development and uneven distribution of democratic competencies in environments increasingly saturated by AI and data-driven systems. Democratic competencies are intended not only as individual civic knowledge or digital literacy, but as the broader capacities required to meaningfully participate in socio-technical governance [22]. This concerns the ability to critically interpret algorithmically mediated information; to understand how digital infrastructures shape visibility, representation and decision-making; to deliberate across difference; and to engage institutions in accountable ways. When such competencies are unevenly distributed across both citizens and institutions, or structurally underdeveloped, participation risks becoming symbolic rather than substantive. The absence of critical digital literacy can intensify epistemic uncertainty and susceptibility to misinformation, contributing to fragmented public spheres [20]. At the institutional level, insufficient capacity to evaluate and govern AI systems may reinforce technocratic decision-making or exacerbate representation gaps, undermining democratic resilience [32]. While AI governance scholarship stresses the importance of informed public deliberation [2], there is limited theorisation of how democratic and deliberative literacy, critical capacity and collective agency are built across generations, sectors and communities.

Gap 6. From Project-Based Participation to Participatory Infrastructures

Finally, participation frequently remains project-based rather than infrastructural. Much of the literature documents discrete pilots, consultations or experimental initiatives [12], but comparatively fewer accounts demonstrate how participatory practices become durable relational infrastructures embedded within institutional routines and long-term transition processes. Engagement often occurs late, episodically or reactively rather than across the full lifecycle of socio-technical systems. This lifecycle gap limits cumulative learning and weakens democratic embedding. As the JRC suggests, safeguarding democratic resilience requires coordinated mixes of participatory innovation, science–policy interfaces and regulated digital infrastructures [32]. Participation needs therefore to be stabilised as an ongoing infrastructural condition capable of accompanying digital and green transitions rather than functioning as episodic intervention.

3.1 Analytical framework for mapping contributions

To operationalise the six structural gaps as an interpretive lens for the selected contributions, we developed a deductive coding schema that translates each gap into a set of analytical dimensions. The schema was used to guide the comparative reading of the papers and to ensure consistency in how contributions were associated with the identified tensions. Each contribution was analysed along three core dimensions:

- **Primary gap addressed:** the main structural tension engaged by the paper (from Gap 1–6), based on its central research problem and contribution.
- **Level of intervention:** the locus at which participation is enacted, distinguishing between *epistemic* (knowledge and meaning-making), *infrastructural* (systems, platforms, data), *institutional* (governance arrangements and decision-making processes), and *capacity-building* (skills, literacy, and agency).
- **Participatory mechanism:** the way participation is operationalised, including for example co-design processes, infrastructuring practices, mediation and facilitation, literacy-building interventions, or governance-oriented approaches.

Table 1 summarises how the six gaps were operationalised within this schema.

4 Mapping contributions to gaps

What emerges from these six gaps is a persistent disjunction between normative aspirations for inclusive, deliberative and technologically supported democracy and the infrastructural realities of contemporary digital and urban governance. What remains insufficiently articulated is how participatory design might function as a way of addressing these structural tensions simultaneously—linking deliberative quality with scale, embedding AI within accountable architectures, bridging digital and urban–environmental domains, cultivating democratic literacy, and transforming participation from event to infrastructure. The mapping below treats each contribution as a situated intervention into already-emerging trajectories—showing which gaps they directly address and which structural limits they expose.

The point of view they bring is that of how participatory practices operate under concrete institutional, infrastructural and socio-technical constraints, offering empirical and conceptual interventions that show how participatory design may address (or expose the limits of addressing) the six challenges identified above.

Addressing Gap 1: The Deliberation–Scale–Impact Dilemma

The first gap concerns the tension between deliberative quality, participatory scale and institutional embedding.

In their Full Paper Advisory today, co-decisive tomorrow? Complementing the participation ladder in smart city innovation with institutional learning perspectives, De Kreek et al. interrogate this tension through their Scan Bike case, exploring how early co-creative phases may produce substantive design improvements (e.g., data minimisation, transparency), yet institutional implementation pressures can gradually displace co-decision into advisory roles. Their analysis does not simply document tokenism but shows how participatory processes generate institutional reflexivity even when

Table 1: Operationalisation of structural gaps for deductive coding

Gap	Tension	Analytical focus	Participatory mechanisms
Gap 1. Deliberation–scale–impact	Tension between deliberative quality, scale, and institutional uptake	Embedding participation in decision-making processes	Co-design, institutional integration, reflective spaces
Gap 2. AI and epistemic power	Redistribution of visibility, knowledge, and authority through AI	Participation in shaping AI-mediated knowledge systems	Participatory AI design, literacy, critical engagement
Gap 3. Platform infrastructures	Structural power of platforms and algorithmic architectures	Participation at infrastructural and architectural level	Platform critique, design interventions, governance approaches
Gap 4. Fragmentation across domains	Disconnection between digital, urban, and environmental participation	Integration across socio-technical and material systems	Cross-domain co-design, situated data practices
Gap 5. Democratic literacy and agency	Uneven distribution of competencies and capacity to participate	Development of individual and collective capabilities	Education, training, mediated participation
Gap 6. From projects to infrastructures	Participation as episodic vs. embedded and sustained	Long-term institutionalisation of participatory processes	Infrastructuring, community-based models, ongoing facilitation

decision power remains constrained. In doing so, they empirically complicate the assumption that scale and embedding are linear achievements, suggesting instead that participatory influence may unfold temporally and unevenly.

In their Full Paper *Knowledge Infrastructuring in the Large-Scale: Sparring Partners and Reflective Spaces in Participatory Design*, Weiler et al. extend this by reframing participation as infrastructuring rather than episodic co-design. Their “meta-third-space” model responds directly to the embedding problem by introducing a mediating layer capable of sustaining reflection across fragmented projects. This intervention addresses the structural conditions under which participation can persist beyond individual pilots.

Addressing Gap 2 and Gap 3: AI Mediation and Infrastructural Power

The second and third gaps concern the redistribution of epistemic power in AI systems and the infrastructural politics of platforms.

In their Exploratory Paper *The ladder of data citizen participation in evaluating news recommender systems: An empirical exploration through an interdisciplinary participatory design workshop*, Horn et al. engage directly with these challenges by interrogating how participation frameworks function in AI-driven recommender systems. Their analysis reveals that traditional participation models struggle to meaningfully intervene in stochastic, opaque architectures. By surfacing epistemological disagreements across disciplines, they demonstrate the limits of participation frameworks when confronted with algorithmic complexity.

In their Full Paper *Enacting utopias: A participatory design approach to AI*, Dindler et al. address the second gap from a literacy and agency perspective. Rather than intervening at platform architecture level, they operationalise participatory design as a mediating practice that equips actors to critically engage with AI systems. Their “enacted utopias” framing foregrounds collective agency in contexts where AI otherwise risks technocratic closure.

Addressing Gap 4: Bridging Digital, Urban and Environmental Participation

The fourth gap concerns the fragmentation between digital governance and urban–environmental participation.

In the Exploratory Paper *Opportunities for participatory design in shaping data centre futures*, Cumbo’s analysis of data-centre expansion directly addresses the convergence of digital and green transitions. By exposing vertical inequities in infrastructural development and proposing participatory design as a literacy and governance mechanism, the paper situates PD within material energy–data entanglements.

In their Exploratory Paper *Seeing, thinking, sharing, sensing small data. A participatory framework to connect citizens’ experiences with urban governance*, Autuori et al. complement this by showing how “small data” practices reconnect embodied, situated experience with institutional urban governance. Their methodology challenges the dominance of aggregated, large-scale sensing systems and reintroduces micro-level civic knowledge into sustainability decision-making.

These contributions explicitly bridge digital infrastructures and urban environmental governance, operationalising participatory design at the intersection of digital and green transitions.

Addressing Gap 5: Democratic Literacy and Collective Agency

The fifth gap concerns the institutional and societal capacity to sustain democratic competencies under AI-infused conditions.

In their Exploratory Paper *Raising the next gen-AI-ration: participatory approaches to the development of AI ethics literacy education for children*, Collyer-Hoar and Rubegni approach this challenge intergenerationally. By embedding AI ethics literacy within participatory design processes involving children and educators, they extend participatory agency into long-term democratic capacity formation. Their work demonstrates how ethical reasoning can be scaffolded in age-appropriate ways, thereby responding to the JRC’s concern about erosion of democratic norms.

In their Full Paper *Mediating digital security: Participatory learning with older adults in smartphone café sessions*, Ghadamighalandari et al. similarly foreground relational infrastructures that enable digital confidence and security among older adults. Their “participatory

infrastructure” model addresses capacity asymmetries not through formal decision inclusion, but through mediated, trust-based learning environments. In doing so, they broaden the understanding of participation beyond formal deliberation to include sustained civic enablement.

Addressing Gap 6: From Project-Based Participation to Participatory Infrastructures

Several contributions converge on the sixth gap, which concerns the shift from episodic projects to durable infrastructures.

Weiler et al.’s meta-level facilitation model, Ghadamighalandari’s community-based participatory infrastructures, and Cumbo’s call for sustained governance mechanisms all respond to the lifecycle gap identified in the literature. Rather than treating participation as a one-off intervention, they all conceptualise it as a stabilised condition embedded in institutional routines, community spaces, and infrastructural planning. As a consequence, taken collectively, these papers articulate participatory design not merely as a process methodology but as a governance infrastructure capable of accompanying long-term digital and green transitions.

5 Towards a conversation about democratic digital futures

As noted earlier, these contributions do not claim to resolve the six structural gaps identified above. Instead, they span the range of structural tensions identified in the literature. All six gaps are engaged, albeit unevenly, through different operationalisations of participation: as infrastructuring and long-term embedding, as literacy and capacity-building, as mediation within AI-driven environments, and as situated interventions in material digital-environmental systems.

As such, they cover how participatory design operates under real-world constraints—across scales, sectors and infrastructures—and demonstrate where it holds transformative potential and where institutional and architectural limits persist. In doing so, they position participatory design as a way of linking democratic deliberation, AI governance and urban-environmental transitions within a shared framework of infrastructural responsibility.

This distribution reveals both complementarities and persistent asymmetries. While several contributions advance participatory infrastructures and capacity-building practices, fewer intervene directly at the level of platform architectures or structural power, highlighting an ongoing imbalance between enabling participation and transforming the conditions that structure it. At the same time, the coexistence of these approaches suggests that participation is not enacted at a single level, but across interconnected epistemic, infrastructural, and institutional dimensions. Given these premises, the selected contributions provide a timely opportunity to discuss democratic digital futures at PDC 2026.

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Mediating Digital Security: Participatory Learning with Older Adults in Smartphone Café Sessions

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Abstract

This study examines how older adults engage with digital technologies, focusing on privacy, security, and participation. Through community-based workshops, we explore usability challenges, fears around online risks, and the role of social learning. Our findings reveal how mediators help older adults navigate digital tools through trust-based support and peer learning. We argue that digital inclusion requires more than accessible design; it also depends on social infrastructures that enable confidence and shared problem-solving. This work contributes to participatory design (PD) by highlighting the value of mediated learning and community-driven support in fostering digital literacy among marginalized aging populations.

CCS Concepts

• **Human-centered computing** → **Empirical studies in HCI**; • **Applied computing** → *Computers in other domains*; • **Social and professional topics** → **Digital divide**; • **Security and privacy** → *Social aspects of security and privacy*.

Keywords

Older Adult, Participatory Design, Digital Inclusion, Security and Privacy, Mediated Learning, Smartphone Café

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1 Introduction

The rapid proliferation of digital technologies has transformed how individuals communicate, access information, and conduct daily tasks. Tools such as smartphones, social media, online banking, and telehealth have become essential infrastructures [25, 50, 54]. However, this transformation has also deepened socio-technical disparities, particularly among older adults who often face complex barriers to digital engagement [48]. These barriers include age-related cognitive and physical changes and limited digital experience [7, 12, 37]. Although research in Human-Computer Interaction (HCI) and gerontechnology has addressed usability and social exclusion among older adults [12, 15, 16, 20], digital security remains a less developed area. Many older adults lack awareness of phishing, fraudulent apps, and complex privacy settings [21, 22, 56]. These challenges are even more pronounced for older migrants, who may also face language barriers, lower access to resources, and limited trust in digital systems.

Few studies have examined how informal community-based interventions could support security literacy and build sustained confidence in navigating digital environments. This paper investigates how participatory, trust-based learning environments can address these gaps. Drawing on six months of ethnographic fieldwork in

two small towns in western Germany, we explore the Smartphone Café initiative, an ongoing municipal program that supports older adults to build digital competency. Through peer-led sessions, personalized guidance, and informal social interactions, guided by trained mediators, these cafés foster an inclusive space where older adults can collaboratively navigate digital tools and security risks.

Our work contributes to PD discourse by conceptualizing these cafés as ‘participatory infrastructures’ [55], sustained, socially embedded environments where design practices are distributed across time, community, and context. Rather than treating older adults as one-time participants in design workshops, we examine how long-term mediation, social learning, and trust-building act as forms of everyday participation.

Research Questions. This study addresses the following questions:

1. How does mediation within participatory infrastructures shape older adults’ appropriation of smartphone practices for digital security literacy?
2. What cognitive, physical, and experiential barriers arise in everyday use?
3. Which mediating practices (material, social, discursive) enable confidence and safer behavior?
4. How do participants carry forward these practices beyond the Smartphone Café (peer help, routines)?

Contribution. We examine how older adults appropriate everyday smartphone practices in community Smartphone Cafés, focusing on digital security literacy (e.g., messaging, updates, payments) as it emerges through participatory infrastructures of mediation and peer support. This paper contributes to PD by concretizing participatory infrastructures through the everyday work of mediation in a municipal Smartphone Café. Empirically, we show how mediators enact material (devices, connectivity, scripts), social (trust, accompaniment), and discursive (risk framing, translation) roles over time; conceptually, we refine intermediation as ongoing design-after-design that sustains security literacy in later life; and pragmatically, we offer four actionable design moves—trusted accompaniment, slow-paced security onboarding, peer guardians, and low-threshold escalation—that PD teams can adapt in community programs.

Structure of the Paper. Section 2 reviews related work on older adults’ technology use, digital security, and mediation. Section 3 describes the Smartphone Café model and research context and methods of the study. Section 4 presents findings on barriers, mediation strategies, and security practices. Section 5 discusses implications for PD theory and practice. Section 7 concludes with directions for future work.

2 Literature Review

2.1 Technology Appropriation and Security Literacy

Technology appropriation refers to how individuals integrate digital tools into their daily routines and social practices [44, 54]. For older adults, appropriation is shaped by complex cognitive, physical, and experiential barriers [17, 27, 32, 37, 41]. A core component of this appropriation process is digital literacy, which extends beyond

operational skills to include critical understanding of information, privacy, and risk management. Kärnä et al. [29] conceptualize it as a multi-level construct encompassing societal, institutional, and individual dimensions.

Security-related digital literacy remains a significant research gap, leaving many older adults vulnerable to phishing scams, fraud, and misinformation [13, 14, 22, 31, 40, 46, 49, 53]. Research suggests that cybersecurity concerns discourage online participation, reinforcing digital exclusion. Morrison et al. [40] highlight that “the stress associated with cybersecurity could lead some older adults to disengage from security behaviors altogether.” Similar to technology appropriation barriers, physical and cognitive limitations also affect security learning. Reduced vision and dexterity make complex authentication methods difficult, while cognitive decline hinders understanding security settings and fraud detection. According to Sánchez [49], “Participants expressed their idea of manipulation as an abstract concept, hinting at an unknown ‘someone’ behind it. [. . .] They feel technology goes too fast (‘things have changed overnight’) and they find it hard to catch up.” This highlights how cognitive barriers impact older adults’ understanding of online security risks, making them more vulnerable to digital threats. Beyond cognitive and physical limitations, social isolation and lack of peer support further limit opportunities for learning about online security best practices. Vrhovec et al. [59] emphasize that cybersecurity competence among older adults is influenced by their familiarity with technology and access to support networks, but other factors, such as stress, financial situation, and perceived responsibility for online safety, also play a role. To enhance digital security literacy, cybersecurity education must be integrated into broader digital literacy programs. Research suggests that hands-on training, peer-led learning environments, and community-based workshops (such as Smartphone Cafés) are particularly effective in increasing confidence, security awareness, and digital inclusion [18, 62]. These initiatives not only teach technical skills but also reduce technology anxiety and promote self-efficacy, empowering older adults to engage with digital environments safely and independently.

2.2 Social Support and Mediation in Participatory Design

Technology appropriation among older adults is strongly influenced by social context and self-efficacy. Social support, ranging from emotional encouragement to instrumental assistance, plays a crucial role in enabling digital engagement [3, 27, 28]. Research highlights the importance of trusted networks in helping users overcome initial fear and uncertainty, particularly through inter-generational or peer learning formats [10, 30, 61]. Perceived self-efficacy, or belief in one’s capacity to use technology, is likewise central. Programs that build confidence through tailored guidance and repeated exposure tend to foster more sustainable digital engagement [33]. These dimensions suggest that digital inclusion is not simply a matter of access or skills training, but of building supportive, participatory ecosystems.

Recent work in PD highlights the significance of mediators or intermediaries, actors who support marginalized participants in

navigating socio-technical systems and engaging with design processes. These figures often operate in informal or under-recognized capacities, helping to translate between user needs, cultural context, and system constraints [9, 52, 55].

Recent work by Teli et al. [55] further conceptualizes intermediary roles through a tripartite lens: material (providing infrastructure and resources), social (building trust and continuity), and discursive (translating needs and framing inclusion). These roles are particularly important when working with older adults, migrants, and other groups whose participation in design processes may be constrained by socio-technical barriers.

In distributed PD contexts, the role of intermediaries becomes especially crucial. Shidende et al. [52] introduce the concept of "implementation mediators", actors who facilitate the ongoing negotiation between local users, global developers, and institutional constraints during and after initial system deployment. This resonates with our findings, where Smartphone Café facilitators act as boundary-spanning figures who not only teach technical skills but foster relational trust and collective confidence.

2.3 Research Gap

Despite growing recognition of participatory infrastructures in PD, little is known about how informal, community-based settings, such as the Smartphone Café, support long-term digital inclusion through embedded mediation. Much of the existing literature in HCI and PD still focuses on short-term design interventions, often overlooking how participation is enacted over time and across everyday contexts.

This study addresses this gap by examining how older adults and mediators co-create learning environments that support not just technical skill development, but shared understandings of digital risk, trust, and agency. It extends PD scholarship by focusing on sustained co-learning relationships, mediation, and the value of hybrid spaces where participation is ongoing, embedded, and relational.

To avoid conceptual drift noted in prior work, we distinguish social infrastructure (everyday care/support arrangements), participatory infrastructure (ongoing scaffolds for co-participation), and participatory ecosystem (wider multi-stakeholder networks that sustain programs over time). These distinctions frame our analysis of mediation and appropriation in the Smartphone Café. We adopt them as analytic lenses in the findings and implications that follow (see Appendix B for a side-by-side comparison).

3 Methodology and Context

3.1 Context & Background

The primary research site was the so-called Smartphone Café program, established and funded in 2019 by the municipality of a small city in western Germany. The program provides a supportive and informal environment for older adults to explore digital tools such as smartphones, laptops, and tablets, under the supervision of trained mediators. Sessions are inclusive, free, and adaptable to diverse participant needs. Sessions, lasting 2.5 hours, are held on the first Wednesday of each month. Participants enjoy refreshments in a relaxed setting. Attendance ranges from 5 to 10 individuals, mostly aged 50 and above. Over time, a regular cohort of attendees has

developed, though new participants continue to join via word-of-mouth, local advertisements, and a dedicated WhatsApp group that shares session details and updates.

In addition to these monthly group sessions, the program includes office hours (individual consultations) and themed afternoons (topic-based group discussions), each held every six weeks. These sessions address the same target group and also take approx. 2.5 hours.

Field engagement began in June 2023, with researchers attending sessions to build trust and rapport. Over time, informal conversations revealed insights into participants' security practices, including reading Google Play reviews and printing suspicious emails as a self-devised risk mitigation strategy.

The two university researchers and two trained student assistants supported the sessions, in effect acting as mediators or educators at times. They received pre-session training and participated in evaluations before and after each meeting. These evaluations focused on facilitation strengths, participant preferences, group dynamics, and improvements in pedagogical strategy.

3.2 Methods

We employed an ethnographic approach to explore the challenges and barriers faced by older adults and mediators in community-based digital literacy programs, with a particular focus on cybersecurity and digital privacy. It was carried out in a "Smartphone Café" in a rural town in western Germany. The research consisted of ethnographic fieldwork, employing observations and semi-structured interviews to examine participants' experiences with digital technology and cybersecurity, the work of the mediators in the café and the interactions between participants.

The study also investigated mediators' strategies and pedagogical frameworks. Grounded in PD and community-based research principles, the approach emphasized embedded interaction in trusted, low-threshold environments such as municipal Smartphone Cafés and social support organizations. This methodology was chosen for its suitability in working with older and migrant populations who face linguistic, cognitive, and technological challenges.

3.3 Participants and Data Collection

Data collection consisted of observations and interviews with participants and mediators, as described above, during the Smartphone Café settings.

Researchers conducted unstructured observations during sessions, focusing on participant–mediator interactions, group dynamics, and common challenges. The flexible, unstructured format allowed the team to capture both expected and unexpected insights. Observational notes were taken during sessions and later reviewed and supplemented with audio recordings (where consent was granted) to ensure accuracy and depth.

Pre- and post-session evaluations were conducted by the research team, which consisted of two primary researchers and two trained student assistants. These evaluations aimed to reflect on group dynamics, facilitation strengths, and areas for improvement in the pedagogical process.

Semi-structured interviews were conducted face-to-face during Smartphone Café sessions, either individually or in small groups.

Table 1: Overview of participants in the Smartphone Café sessions (excluding mediators).

ID	Gender	Age	Occupation	Primary concerns / topics (security-relevant in <i>italics</i>)	Confidence
P1	Female	69	Retired baker	WhatsApp Status; Amazon ordering; <i>suspicious links/emails/calls</i> ; keeps passwords in notebook; prefers laptop	Improved
P2	Male	60+	NA	Maps/navigation while walking; address input	Improved
P3	Male	NA	NA	Facebook and email issues; <i>strong passwords</i> ; <i>phishing awareness</i>	Improved
P4	Female	NA	NA	WhatsApp group video calls; sharing photos via WhatsApp	Medium
P5a	NA	NA	NA	Online US visa application; <i>avoid fraudulent sites</i> ; <i>verify official websites</i>	Improved
P5b	NA	NA	NA	Online US visa application; <i>avoid fraudulent sites</i> ; <i>secure data handling</i>	Improved
P6	Male	NA	NA	SIM usage; unknown calls; <i>foreign messages</i> ; <i>scam SMS</i>	Medium
P7	Female	70	Retired butcher	Basic phone use; step-by-step guidance	Low
P8	Female	70	Retired nurse	Online health portals; <i>privacy awareness</i>	Medium
P9	Female	70	Retired homemaker	Family communication; <i>avoiding scams</i>	Medium
P10	Female	68	Retired lawyer	<i>Sensitivity to scams</i> ; cautious with personal data	High (cautious)
P11	Female	65	Former librarian	E-books; device settings confusion	Low–Medium
P12	Male	72	Retired factory worker	Calls; photos; avoids digital banking	Low

Notes. NA = not available (participant did not disclose). Confidence reflects self-reported comfort during/after sessions (collapsed to Low / Low–Medium / Medium / High or “Improved” from pre/post reflections). All entries are anonymized; potentially identifying details were generalized. Participation and data use followed informed consent procedures.

Written consent was obtained for individual interviews, while group discussions proceeded with verbal consent. Interview guidelines began with demographic questions and general inquiries about device usage and purposes.

Table 1 gives an overview over the people we interacted with in the context of the Smartphone Café, apart from the mediators.

Empirical corpus (overview). The Smartphone Café study reported in this paper is based on a focused subset of the broader CrossComITS [1] research program; importantly, the data analysed here were collected *prior to the paper submission on 13 June 2025*. We draw on six months of ethnographic fieldwork in two small towns in western Germany. During this period, we attended the regular monthly Smartphone Café sessions (2.5 hours each; 6 sessions) and additionally observed the program’s complementary formats, including office hours (individual consultations) and themed afternoons (topic-based group discussions; held approximately every six weeks; approximately 4 sessions each). Our corpus combines (i) unstructured observations documented in fieldnotes, supplemented by audio recordings where consent was granted, (ii) pre- and post-session evaluation notes produced by the research team, and (iii) semi-structured interviews conducted during sessions, individually or in small groups with older adult participants (Table 1) and the two mediators. All materials were anonymised and imported into MAXQDA [58] for analysis.

3.4 Data Analysis

Data were analyzed using MAXQDA [58] (see Appendix B for the codebook). The analysis employed a thematic coding approach, integrating both predefined categories and emergent codes to capture a comprehensive understanding of participants’ experiences and mediators’ strategies in digital literacy education. Thematic analysis followed Braun and Clarke’s six-phase framework [6], and was adapted for HCI contexts using methodological guidance from Blandford et al. [5].

Data sources included observational notes, interview transcripts, and audio recordings and were triangulated to ensure consistency and validate key findings. Data analysis was conducted by the authors, who collaboratively engaged in coding and interpretation of the qualitative material, ensuring consistency and reflexivity throughout the process.

Reporting conventions. To preserve anonymity and because quotes from group settings were not systematically linked to unique identifiers, we attribute quotations generically (e.g., *Participant*, *interview*; *Participant*, *café session*; *Mediator*) and report qualitative summaries rather than exact counts.

3.5 Research Team and Positionality

The research team consisted of university-based investigators and trained graduate assistants. Both researchers and local facilitators acted as mediators during the sessions, providing technical assistance, emotional reassurance, and personalized guidance to participants. These mediators supported participants in navigating

smartphone use, security concerns, and digital tasks in real time. While some mediators were affiliated with municipal programs, researchers themselves also stepped into this mediating role, allowing them to build trust, support learning, and observe challenges as they emerged. However, at times researchers acted as co-mediators (e.g., guiding a checklist). We mitigated role-bias by alternating roles with municipal staff, memoing decisions, and triangulating fieldnotes/interviews. We note the dual-role as a strength for insight and a limitation for inference.

3.6 Ethical Considerations

This study followed strict ethical guidelines and received approval from the affiliated institution. Written consent was obtained from participants prior to individual interviews, and verbal consent was used for group discussions. Prior to each session it was announced that researchers were present and would collect data in observations, and participants had the option to ask questions, voice concerns or opt out of taking part of the study (they would still be able to participate in the session, but no notes would be taken about them). Interview participants were given the option to decline audio recording. Anonymity and confidentiality were maintained throughout to ensure participants felt safe sharing their experiences.

4 Findings

Dataset context. We participated in a series of Smartphone Café sessions, complemented by group interviews, to explore how older adult participants engage with and adapt to digital technologies. During these sessions, participants were provided with hands-on assistance and guidance in using their smartphones and other digital devices. The group interviews allowed for a deeper exploration of their experiences, challenges, and attitudes towards technology. These interactions provided valuable insights into the practical issues faced by older adults when using digital tools and revealed the emotional and social factors that influence their technology appropriation. The following findings detail the key themes that emerged from these sessions and interviews.

Across the corpus, we repeatedly observed peer help during sessions, a clear preference for in-person learning among interviewees, and widespread reliance on paper-based password practices.

4.1 The Smartphone Café: Where Skills Meet Social Inclusion

Amongst our participants, familiarity with smartphones was minimal, although some had more expertise than others in using a smartphone. Familiarity ranged from using it solely to check the weather forecast, horoscopes and phone calls, to using WhatsApp and YouTube.

Nevertheless, or perhaps because of this, participants consistently highlighted the value of learning new skills and the importance of social interaction in the Smartphone Café. One participant noted that attending these sessions was not only about acquiring new knowledge but also about meeting new people and enjoying the social aspect of the gatherings. People chit-chat, help each other, and also engage in joint "extracurricular activities" such as cooking events, organized by mediators. The sentiment *"And yes, you always*

learn something new. Something. And meet nice people. That's important to me too," reflects the dual benefit of these sessions, enhancing technical skills while fostering a sense of community.

The motivation for attending the Smartphone Café was consistently tied to a desire to learn and maintain social connections. One participant articulated this dual motivation succinctly: *"Yes, my motivation. I'd like to learn too. Social contacts and everything"*. This reflects the café's role not just as a learning environment but also as a social hub for participants.

Participants who had attended the café regularly since its inception expressed satisfaction with the format and the specific topics covered. One participant emphasized their regular attendance and the usefulness of special topic sessions, especially for newcomers, which facilitated both learning and social integration: *"No, no, nothing bothers me. I've actually been here from the beginning. And I come more regularly and also for certain topics... I met them here"*.

Learning outcomes varied among participants, with many expressing that they had gained practical skills that improved their ability to use their smartphones. For instance, one participant mentioned learning how to better handle photography apps and how to combine applications to reduce clutter on their phone. The phrase *"At some point you always learn something new"* was repeated, underscoring the continuous learning process facilitated by the sessions. Another participant reflected, *"I just put more things on it [my smartphone]. At first I couldn't do so much with it,"* referring to their growing ability to install and explore apps over time. This suggests increased confidence and curiosity as a result of the sessions.

The preference for in-person interaction over online alternatives was also evident. When asked if they would prefer the Smartphone Café to be offered online via platforms like Zoom, one participant strongly preferred the in-person format, citing the ease of verbal expression and hands-on interaction: *"No, I prefer to come here"* and emphasized the ease of communication that in-person sessions offer: *"It's just easier to express and ask and do things verbally than to communicate via something like that"*. This preference reflects a broader sentiment among the older adults that physical presence allows for more direct and effective communication, as well as easier clarification and assistance when compared to virtual alternatives.

The impact of the Smartphone Café on participants' lives extended beyond technical skills to include enhanced social interactions. When asked how the café had improved their life, one participant highlighted the importance of social contacts and the enjoyment derived from games: *"Yes, it improves social contacts and games and everything"*. Another participant summed up their motivation as wanting *"to learn, social contacts and everything,"* suggesting that the social aspect is just as important as the educational component. This suggests that the café not only facilitates digital literacy but also contributes to the overall well-being of participants through social engagement.

Participants also discussed their experiences with digital communication tools like WhatsApp and Facebook Messenger. While these tools were generally appreciated for their ability to connect people across long distances, there were concerns about quality and reliability. For instance, a participant mentioned issues with hands-free systems in cars, where incoming calls were often difficult to understand. Similarly, another participant shared frustrations with poor internet connections affecting the quality of video calls.

These experiences underscore the need for better infrastructure and user-friendly technology that can accommodate the specific needs of older adults participants, such as clear audio during calls and reliable connectivity.

Regarding digital literacy, participants generally acknowledged improvements in their technical skills since attending the café. One participant affirmed this, stating, “Yes, *that’s right*,” when asked if they felt their technical skills had improved. However, there was a clear preference for in-person sessions over online alternatives, with one participant noting, “No. *I’m not that far*,” indicating that the face-to-face interaction was more aligned with their comfort level and learning style.

Overall, these findings suggest that the Smartphone Café is not only an effective means of improving digital literacy among older adults participants but also serves as a crucial social space where participants can connect with others, learn collaboratively, and build confidence in using technology. The preference for in-person sessions further emphasizes the need for accessible, community-based learning environments that cater to the unique needs of older adults.

4.2 Privacy Concerns and Password Practices: The Case for Targeted Security Literacy

Participants demonstrated a range of practices and attitudes toward password management, with some relying on their smartphones’ automatic saving features while others were less aware of the potential risks involved. One participant admitted, “Yes, *everything is saved*,” when asked how they manage passwords, implying reliance on the device’s built-in capabilities. This method, while convenient, raises concerns about what might happen if the device is lost or damaged. The participant had not considered the implications of forgetting passwords, reflecting a gap in preparedness: “Yes, *I haven’t thought about that yet*” This lack of foresight underscores the need for increased awareness and education about the importance of secure and accessible password management.

Some relying on traditional methods such as writing them down and hiding them for security. One participant explained, “*You have to write them down. Keep them secret*”. However, this method posed challenges when access to the password was needed away from home, as the participant would have to return home to retrieve the paper: “*So, I have the paper. Then I look at the paper*,” highlighting the inconvenience and potential risk associated with this method.

During the discussion, when a participant casually mentioned their password aloud, it became clear that there is a lack of understanding about the importance of keeping such information confidential. One of the researchers gently responded, “*You shouldn’t actually say your password*”. The participant’s response, followed by laughter, highlights on the one hand the trust participants might have placed in the environment, which enabled them to feel comfortable enough to share their password openly, but on the other hand perhaps also a problematic lack of concern about the risks of security breaches.

Security-related experiences were also explored, with one participant revealing limited experience in this area. When asked about bad experiences with viruses or fraud, the participant responded negatively and admitted to having little experience with password

management: “*I have to be honest: How do I save the password? Because I haven’t done much so far*”. This highlights a gap in knowledge and experience related to digital security, underscoring the need for targeted education in this area.

The discussion also highlighted the potential for biometric security features as a more secure alternative for older adults participants. An interviewer mentioned that biometric options, such as facial recognition, could provide enhanced security: “*There are functions on the phone that...recognize your eye and only then can someone access it*”. This suggestion points to the value of integrating user-friendly, advanced security features to protect sensitive information without relying on memory or written records.

Password security and management emerged as a significant concern for participants. Many found it difficult to remember passwords and resorted to writing them down on paper and storing them in a folder. While the “*trick with the sentence*” (using a memorable phrase to create a strong password) was known, it was not widely used. This indicates a gap between awareness and practice, suggesting that more practical and accessible methods for secure password management should be introduced and reinforced.

Concerns about data security and privacy were prevalent among the participants. One participant expressed uncertainty and fear regarding online data security, stating, “Yes, *data security, I’m not so sure about that sometimes. I’m scared. Because you hear too much*”. This fear was compounded by a lack of comprehensive understanding, leading to cautious behavior online. For example, the participant refrained from returning calls from unknown numbers and shared an anecdote about a warning from a friend regarding scam phone calls: “*There are wrong addresses here with WhatsApp again and then he wrote not to press the blue button*”. This reflects a reliance on community advice and face-to-face warnings to navigate potential online threats.

Privacy concerns were also noted, particularly in situations where participants were unable to view someone else’s profile picture, leading to uncertainty about whether they had been blocked or if the person simply did not have a profile picture.

Security and Trust issues were recurring concern among participants, particularly regarding online banking and password management. One participant, a woman with medium digital competence, recounted her child’s unfortunate experience with online banking fraud, which reinforced her decision to avoid online banking altogether. This highlights a broader issue of trust in digital financial transactions among older adults.

Participants also voiced a preference for personal contact when seeking help with security issues or device problems. The suggestion to allow questions to be asked without requiring registration reflects a desire to minimize barriers to seeking help and to maintain privacy. Moreover, the concept of a secure, device-integrated password management feature, potentially implemented as a pop-up box, was suggested as a way to address concerns about remembering passwords.

Another significant area of concern related to privacy, was particularly in using location services with Google Maps. One participant was initially hesitant to enable location access due to privacy concerns. However, after discussing the safety and utility of the feature, she enabled it and subsequently learned to navigate using both walking and driving modes. This case underscores the importance

of addressing privacy concerns directly and providing clear explanations to build trust and confidence in using digital tools.

Furthermore, participants expressed a strong preference for supporting local businesses over online shopping. As one participant explained, *“They don’t do online shopping because they want to support local stores; they only buy things they cannot get locally from trusted shops”*. This reflects a community-oriented mindset and a potential resistance to the impersonal nature of online transactions, which might be less appealing to this demographic.

Past negative experiences with online shopping significantly influenced participants’ attitudes. For instance, one couple decided to quit using eBay after a bad experience, stating, *“They have quit eBay after bad experiences (they sent a package, and it was broken...)”*. Such experiences contribute to a reluctance to engage in online activities, highlighting the importance of building trust and ensuring positive experiences in digital environments for older adults.

Overall, the findings suggest that while older adults participants exhibit a range of digital behaviors, from minimal use to active engagement with specific functions, they often rely on basic security practices and community support to navigate digital threats. The reliance on written passwords, limited digital activity, and concerns about data security highlight the need for targeted educational interventions to enhance digital literacy, particularly in the areas of online safety and secure password management. These interventions could help build confidence and ensure that older adults can safely and effectively navigate the digital landscape.

4.3 Mediators and Facilitation Strategies

Mediators played a central role in creating an engaging and inclusive learning environment. Mediator 1 (M1), a municipal employee involved since 2022, helped integrate Themennachmittag sessions with the Smartphone Café. Mediator 2 (M2), a freelance digital educator, brought specialized knowledge in digital literacy training. Across sessions, mediators also deliberately cultivated a relaxed, social atmosphere that made it easier for participants to voice concerns and uncertainties: *“We do chit chats to soften the atmosphere, so they feel relaxed and talk about their questions and problems.”*

To build trust and foster community, mediators and researchers also engaged in informal social activities such as cooking events and casual games (e.g., ping pong) at the café. These activities helped strengthen relationships and make participants feel comfortable expressing their challenges and questions.

The café’s physical setup supported small-group interaction: tables for 3–4 participants, shared Wi-Fi, and hands-on troubleshooting using participants’ own devices. Free internet access was provided, and mediators assisted participants in connecting their personal devices—including smartphones, tablets, or laptops. Instruction was personalized based on each participant’s skill level. Topics ranged from basic tasks (e.g., sending messages or managing photo galleries) to more complex issues such as password recovery or identifying phishing attempts. Within this participatory infrastructure, we repeatedly observed four mediating practices that shaped how security learning happened in situ: *trusted accompaniment, slow-paced security onboarding, peer guardianship, and discursive reframing*.

Trusted accompaniment (staying-with through risky or uncertain moments). Participants often framed help-seeking as relational: instead of “figuring it out alone,” they preferred a known and trusted person to stay with them while navigating unfamiliar steps (e.g., recovery flows, updates, unknown messages). This was visible in the way participants described what they would do when a phone was lost or compromised. One participant described immediately turning to the mediator as a first response: *“I call M1 first, I would have to report to the police? I don’t know.”* Such accounts show that “security” was not only a technical matter but also a question of *who* could be relied on for calm, non-judgmental assistance. Mediators also built this trust through informal social activities (e.g., games, cooking events), which lowered the threshold for asking “small” questions that often had security implications.



Figure 1: Trusted mediators facilitating group interaction and digital engagement

This emphasis on personal contact and trust was also echoed by mediators, who described their role as accompanying participants through uncertainty rather than simply delivering instructions.

Slow-paced security onboarding (step-by-step, repeatable routines). A recurring challenge was that security-relevant actions (password practices, privacy settings, updates) were experienced as fragile: participants feared “breaking something” or losing access. Mediators responded with slow, step-by-step guidance and encouraged participants to externalise memory demands (notes, routines). Participants’ password practices illustrate this tension. Some relied on device auto-saving (*“Yes, everything is saved”*), while others used paper-based strategies: *“You have to write them down. Keep them secret.”* In one moment, when a participant casually spoke their password aloud, a researcher intervened gently—*“You shouldn’t actually say your password”*—highlighting how the café’s supportive atmosphere could simultaneously enable openness and require careful boundary-setting. Across these interactions, “onboarding” meant more than explanation: it involved pacing, repetition, and making security steps feel doable. For instance, when a participant

struggled with the “forgot password” function, the mediator demonstrated the process step by step, then guided the participant through the task on their own device.

Peer guardianship (participants helping participants to triage risk). Beyond mediator support, participants also relied on peers and everyday networks to interpret suspicious messages, calls, or links. This sometimes happened in-session (regulars assisting newcomers) and sometimes through external peer warnings that were brought into the café as “evidence” for discussion. For instance, one participant described receiving a warning from a friend about suspicious WhatsApp prompts: “There are wrong addresses here with WhatsApp again and then he wrote not to press the blue button.” Such peer-to-peer advisories functioned as lightweight “guardianship,” where participants circulated simple rules (“don’t press the blue button,” “don’t answer unknown numbers”) to reduce risk. The café amplified this by turning individual alerts into shared learning moments: mediators invited others to share their strategies and normalised checking with the group before acting.

We also observed peer learning emerging organically: after receiving help with password recovery, the same participant later assisted others facing similar issues, illustrating how support practices circulated among regular attendees and newcomers.

Discursive reframing (making abstract threats understandable). Mediators frequently translated security concepts into relatable metaphors to reduce anxiety and support confident action. When discussing suspicious links and phishing, a mediator reframed the threat in everyday terms: “Think of this as a stranger knocking on your door without proper ID.” These analogies helped participants evaluate risk without needing technical language, and they legitimised “pausing” before clicking as a sensible, everyday precaution. Discursive reframing also supported privacy-related decisions, such as enabling location services for navigation: when participants hesitated due to privacy concerns, mediators explained trade-offs in concrete terms and guided them through settings changes. In effect, language worked as a security tool: it made threats discussable and transformed fear into actionable judgement.

At the same time, mediators noted tensions arising from the wide range of participant skill levels: some attendees experienced the sessions as repetitive, while others felt overwhelmed. These dynamics highlight the need for more customizable materials and structured opportunities for peer-to-peer support within community-based learning infrastructures. Across these practices, M2 emphasized the importance of design and facilitation approaches that alleviate anxiety, encourage calm exploration, and foster curiosity rather than expecting immediate results. He advocated offering alternatives and allowing participants to solve problems at their own pace, supported by trust, assurance, and collaborative problem-solving.

5 Discussion

This section synthesizes the study’s findings with existing literature and explores broader implications for older adults’ digital engagement, particularly through the lens of Smartphone Café sessions. In addressing our research questions, we examine (RQ1) how mediation within participatory infrastructures shapes older adults’ appropriation of smartphone practices for digital security literacy;

(RQ2) the cognitive, physical, and experiential barriers that arise in everyday use; (RQ3) the mediating practices—material, social, and discursive—that enable confidence and safer behavior; and (RQ4) how these practices carry forward beyond the Smartphone Café through peer help and emerging routines.

Our findings confirm and expand prior research on digital inclusion, social learning, and cybersecurity literacy by emphasizing the central role of mediated, relational learning in enabling older adults to engage with digital technologies in safe, meaningful ways.

5.1 Challenges in Technology Appropriation and Security Concerns

Older adults face persistent challenges in appropriating digital technologies, consistent with earlier research [7, 36]. Participants in the Smartphone Café sessions struggled with basic and advanced digital tasks, such as managing photos, using maps, and handling updates in applications like WhatsApp. These barriers stem not only from cognitive and physical limitations but also from limited early exposure to digital tools [7, 12, 47]. Participants expressed frustration with rapid interface changes and unnecessary updates, which they felt increased confusion rather than offering value. This highlights the need for digital systems designed with simplicity and predictability for aging users.

However, the challenges extend beyond usability. Our findings show that emotional responses to digital security are particularly strong. Participants expressed anxiety, fear, and hesitation when faced with online services, citing concerns over scams, fraud, and opaque security protocols [12, 15, 41, 56, 57]. These concerns often lead to avoidance behavior, where individuals choose not to engage at all with certain digital services, particularly those involving sensitive information [19, 33].

Our findings confirm earlier results that security-related challenges among older adults fall into three key categories. First, cognitive and physical barriers, such as declining memory, slower processing speed, and reduced dexterity, impact their ability to manage authentication methods and secure passwords effectively. We saw this in how people struggled to remember passwords. Second, psychological and social barriers, including fear of scams, phishing attacks, and financial fraud, contribute to avoidance behaviors and a lack of confidence in navigating security settings. Finally, usability and systemic barriers, such as opaque security settings and complex authentication processes, create additional obstacles that may expose users to digital risks [14, 39]. These issues are compounded when users opt for convenience over safety, using weak passwords or bypassing warnings, thereby increasing exposure to digital risk [43, 64].

Yet, as our study shows, security is not only a technological problem; it is inherently social. Older adults often learn to manage digital risks not by reading instructions or navigating interfaces alone, but through relational, trust-based encounters with others. At the Smartphone Café, participants received emotional reassurance, peer validation, and real-time guidance, an environment in which fears were acknowledged and learning was shared. This aligns with prior work on “intermediated use” [9] and Akama’s notion of “relational participation” [2], where the presence of mediators transforms uncertainty into agency. For example, a participant who

had long avoided updating WhatsApp due to fears of breaking something shared, after a guided session: “Now that I see how it works, it’s actually easier than I thought.” In another instance, a casual peer conversation about password safety led one attendee to begin using a physical notebook for safe storage. These moments reflect ‘situated learning’, not just instruction, but co-presence, repetition, and trust.

Therefore, community support plays a crucial role in helping older adults navigate digital security challenges [51, 62]. Participants in the Smartphone Café sessions benefited from guided learning approaches, where mediators provided both technical and emotional support. This aligns with previous research emphasizing that social learning and trust-based support systems enhance digital appropriation among older adults [27, 56]. Social support serves multiple functions by reducing technology-related anxiety, providing hands-on assistance with password management and fraud detection, and fostering peer learning through shared experiences.

Security literacy, in this context, emerges from social infrastructures like the Smartphone Café, not merely from interfaces or settings. Mediators played a crucial role not only in providing information, but also in holding space for confidence-building, clarification, and trial-and-error learning. Designing effective security interventions for older adults therefore requires more than accessible technology; it demands systems that acknowledge and support these ‘social modes of learning and care’. Step-by-step training on security best practices, delivered in an accessible and structured format, can help older adults feel more confident in protecting themselves online [45]. Future programs should formalize this insight: integrating peer mentorship, slow-paced explanation, and emotional reassurance into structured digital literacy training. Community-driven, mediator-supported models hold great promise for enabling sustained digital engagement and resilient, self-aware security practices. These patterns clarify **RQ2**: barriers are not solely cognitive or physical but also *experiential*, shaped by prior negative encounters and ambient risk talk. They also speak to **RQ1**, where appropriation of security-relevant routines depends on the presence of mediators and peers who can slow the pace, externalize steps, and normalize rehearsal.

5.2 Mediation and Support Strategies

Community support plays a crucial role in helping older adults navigate digital security challenges. Participants benefited from guided learning approaches in the Smartphone Café sessions, where mediators provided both technical and emotional support. This aligns with previous research emphasizing that social learning and trust-based support systems enhance digital appropriation among older adults [11, 27, 35, 51, 56, 62].

Social support in these sessions functioned in multiple ways. Emotional reassurance was a significant factor, as participants expressed a reduction in technology-related anxiety when engaging in a safe and supportive learning environment. Practical assistance also played a key role, particularly in helping older adults manage passwords, detect fraudulent activities, and navigate complex application interfaces. Additionally, peer learning emerged as an important aspect, as participants shared their experiences and

problem-solving strategies, reinforcing each other’s self-efficacy and confidence in digital security practices.

To answer **RQ3** (Mediating practices), across sessions, four practices repeatedly underpinned safer behavior: (1) *Trusted accompaniment*—a known mediator or peer stays with the participant through the whole task; (2) *Slow-paced onboarding*—see-once/do-once sequences with printed or on-device mini-scripts; (3) *Peer guardianship*—regulars informally triage suspicious messages and updates at the table; (4) *Discursive reframing*—risky actions metaphorized (e.g., “locking the front door”) to reduce anxiety and legitimize action. For example, one participant initially struggled with a WhatsApp security update but, after receiving step-by-step guidance, noted that it was easier than expected. This instance highlights how direct support can demystify security features and encourage continued digital engagement. Similarly, discussions on password management encouraged participants to consider safer digital habits, demonstrating that interactive and peer-supported learning environments effectively enhance cybersecurity competence.

These findings reinforce the importance of mentorship programs and peer-assisted learning as strategies to improve digital security awareness among older adults. Future interventions should incorporate structured training programs that combine technical guidance with ongoing emotional and social support, ensuring that older adults not only gain the necessary skills but also develop confidence in their ability to navigate digital environments securely. These practices persisted beyond sessions (**RQ4**), with participants reporting use at home and relaying them to neighbors and friends.

5.3 The Smartphone Café Initiative

The Smartphone Café initiative served as a critical setting for exploring these interactions. This program showed to provide a supportive and informal environment where older adults can come together to learn and experiment with digital tools under the guidance of mediators. The café sessions were designed to be inclusive and accommodating, addressing the diverse needs and skill levels of participants.

The practical approach of the sessions helped to demystify technology and to build confidence among participants. Müller and Struzek [42] describe “appropriation cafés”, a similar format, as key to the PD process in the Cognitive Village project, where older adults explored and learned to use digital technologies in a supportive environment. Their sessions helped participants build digital competence and engage in discussions on future technological developments, fostering motivation and meaningful participation in the design process [42].

A key feature of the Smartphone Café is its focus on personalized support. Mediators offer one-on-one assistance, answering questions and providing step-by-step guidance tailored to the individual’s pace and understanding. This personalized attention helps alleviate the anxiety and frustration that often accompany learning new technologies, making the experience more positive and empowering. According to Hornung et al. [24] “Informal coffee-and-cake-settings helped provide a cozy and casual environment in order to prevent stress and limit frustration in their learning experiences”. Our study shows that these findings also extend to matters of security and privacy, and their respective peculiarities.

Moreover, the café fosters a community atmosphere where participants can share their experiences and learn from each other. This peer support is invaluable, as it provides social reinforcement and encourages continued engagement with technology. The collaborative environment also allows for the exchange of tips and strategies, further enhancing the learning experience. According to Liu et al. [33] “that promoting social engagement can motivate people to engage in more complex interactions, mobilize cognitive abilities, and help maintain good mental health”.

By observing and engaging with participants in these sessions, this study leverages valuable insights into the digital habits, preferences, and concerns with regard to security and privacy of older adults. The interactions recorded during the café sessions reveal common challenges, such as difficulties with app navigation, security concerns, and preferences for certain types of digital content and services. These observations are crucial for understanding the real-world experiences of older adults and identifying effective strategies to support their digital literacy journey.

Framed as a *participatory infrastructure*, the Café coordinates material scripts, social roles, and discursive framings that sustain learning between sessions rather than delivering one-off training. This suggests design implications: invest in stable mediator roles, printable micro-scripts for risky actions, and lightweight peer roles that can be enacted outside formal programming.

6 Implications for PD and Educational Interventions

Our findings show that addressing digital exclusion among older adults is about more than simply applying user-centered design (UCD) principles. While UCD is widely accepted in the design industry, many digital products still fail to meet the needs of older adults, not necessarily due to a lack of awareness, but because their needs are often de-prioritized or considered too complex to integrate into mainstream development. Rapid development cycles, youth-centric markets, and assumptions about digital familiarity can overshadow the specific usability and accessibility needs of older populations. As studies show, older adults often struggle to use digital tools compared to younger generations [23, 36, 48].

Rather than focusing solely on design principles, it is essential to prioritize the lived experiences and adaptive strategies of older adults. In our study, participants often faced challenges with newer features, even when they had mastered basic digital tasks such as messaging or photo browsing. These findings align with those of Bertolazzi et al. [4], who point to the cumulative effect of sensory limitations, cognitive change, and low self-confidence in learning as barriers to sustained digital appropriation. Our study emphasizes that these challenges are not abstract problems, but are experienced daily through frustration, uncertainty, and fear.

Muller et al. [41] emphasize a sensitive and user-centric approach to technology appropriation, ensuring that interventions are practically beneficial and emotionally supportive, enhancing older adults' ability to navigate the digital world confidently. Czaja et al. [12] discuss tailored educational programs that are tailored to meet the learning needs of older adults. Interventions such as repetition, simplified instructions, and hands-on practice can improve older adult learners' retention and ease of use. In light of cognitive challenges

such as memory decline and slower information processing, these pedagogical techniques are vital for older adults to acquire and maintain digital skills effectively.

Yap et al. [63] note that “older adults technology appropriation offers several benefits, such as improving quality of life [34], enriching lives through gameplay [60], enhancing social interactivity and cognitive skills, and decrease depression [47], and promoting a more independent and healthier lifestyle [8]”. Pihlainen et al. [48] argue that “engagement in education and learning in various fields—digital or not—can have profoundly positive effects on older adults' quality of life, their outlook on life, and images of ageing [26], particularly in the context of digital technologies”. Mitzner et al. [36] emphasize that technology adoption in later life is not a “one-off decision” but an extended process that develops as needs arise and use becomes routinized. Müller and Struzek [42] state that “Older people want to understand what they can use technology for, so it has to be meaningful for them to embark on the learning journey”.

However, these design and educational interventions are essential for bridging the digital divide, a gap that not only limits access to technological benefits but also exacerbates social isolation. By ensuring that digital tools are accessible and that older adults are equipped with the skills and confidence to use them, we can promote greater digital inclusion. According to Liu et al. [33] “many cases of social isolation and rejection are frequently found among the older adults population; these were commonly correlated with the weakening of the person's mental health, which can cause mental disorders such as depression”.

Our study highlights the broader social implications of digital exclusion among the older adults. The preference for analog methods and the avoidance of online activities not only limit access to the benefits of digital technologies but also contribute to social isolation. As more services move online, the risk of marginalizing those who are digitally excluded increases. Therefore, fostering digital inclusion through accessible design, supportive learning environments, and trust-building initiatives is essential. Such efforts can enhance the quality of life for older adults by enabling them to participate fully in the digital society, stay connected with loved ones, and access essential services. In their study, Guo [20] noted that “respondents were also frustrated by the lack of human contact with like-minded peers to learn together, which is consistent with findings on the greater social isolation experienced by older adults as a group”. Mohan and Lyons [38] state that “the wellbeing of older people is supported where family members assist in learning and problem solving, where tolerance and patience boost confidence, though frustration across generations in technological ability is also recognized”. Furthermore, concerns about media storage, privacy, and managing multiple accounts were prevalent, indicating a need for practical tips and reliable tools. According to Hornung [24] “There are many reasons for the difficulties with IT appropriation and acceptance among the older adults, ranging from privacy and security to concerns about self-presentation”.

Our work shows that it is possible and successful to replicate experiences of learning with peers and assistance and problem solving that others have reported, with regards to the use of digital media and cyber security. This is especially relevant as it is vital to address and overcome fears related to security risks that Hornung

reported [24] and which we also detailed above, as they inhibit digital inclusion and participation of older adults.

A key feature of the Smartphone Café model is the role of mediators, volunteers, municipal staff, and younger participants who support older adults during learning. These mediators were not only technical guides, but also emotional and social facilitators. They translated abstract instructions into meaningful action, offered reassurance during failure, and paced the sessions in ways that matched participants' comfort. Their presence made the difference between confusion and understanding, hesitation and confidence.

7 Conclusion

This study emphasizes the importance of multifaceted support systems for older adults in adopting digital technologies, particularly in addressing security and privacy concerns. The findings highlight the necessity of designing digital environments that accommodate the cognitive and emotional needs of older adults while alleviating security-related anxieties. Ensuring that digital tools and educational programs are accessible and tailored to this demographic is essential for fostering greater digital inclusion and online safety.

From a theoretical perspective, this research contributes to the fields of HCI and PD by demonstrating how older adults' digital security concerns intersect with social learning, and the crucial role of mediators and mediation in creating suitable learning environments. While previous studies have focused on general digital literacy barriers, this study expands digital inclusion models by emphasizing the role of real-time mediation and peer learning, specifically in addressing security anxieties. The findings reinforce the idea that social support networks play a crucial role in helping older adults build confidence in digital security practices.

On a practical level, this study underscores the need for intuitive security designs and tailored cybersecurity education for older adults. Developing user-friendly password management tools, simplifying authentication processes, and incorporating peer-led learning environments can significantly enhance digital confidence and engagement. Designing secure digital platforms that prioritize clarity and ease of use will help reduce the cognitive burden associated with navigating security settings.

Additionally, community-based programs such as Smartphone Cafés provide a scalable and effective model for embedding cybersecurity literacy into informal learning settings. These initiatives not only offer technical guidance but also create supportive environments where older adults can learn collaboratively and reinforce their digital skills through social interactions. Future research should further investigate the long-term impact of such interventions on older adults' digital autonomy and overall well-being.

By addressing the key challenges older adults face in digital security and literacy, this study contributes to the broader discourse on digital inclusion, security education, and community-based learning interventions. Creating educational and technological solutions that cater to the specific needs of older adults will promote safer, more inclusive participation in the digital world, ultimately enhancing their ability to navigate digital spaces with confidence and security.

However, this study is based on a single municipal Smartphone Café initiative in two small towns in western Germany, where a

stable in-person program, trusted mediators, and recurring participation shaped how security learning became possible. The practices we describe—trusted accompaniment, slow-paced onboarding, peer guardianship, and discursive reframing—are likely to travel to other community-based digital support settings, but their form may differ where funding is unstable, staffing is volunteer-only, participation is more transient, or language and migration histories create additional mediation needs. Rather than claiming direct generalisability, we offer these practices as transferable design sensitivities that can guide adaptation and evaluation in other local infrastructures.

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A Appendices

B Concept Distinctions

Table A1: Distinguishing social infrastructure, participatory infrastructure, and participatory ecosystem.

Term	Scope	Core actors	Temporality	Governance	Example in our case
Social infrastructure	Supports everyday interaction and care	Community orgs, volunteers, venues	Ongoing	Informal/formal local rules	Café venue, regulars, municipal staff
Participatory infrastructure	Arrangements enabling <i>ongoing co-participation</i> in shaping practices/services	Participants, mediators, designers	Program cycles; iterative	Shared norms; light scaffolds	Session scripts, peer roles, co-authored checklists
Participatory ecosystem	Network linking programs, policies, services, markets	NGOs, city services, vendors, clinics	Multi-year	Multi-stakeholder	Café ↔ municipal IT helpdesk ↔ telecom shop

C MAXQDA Codes



Knowledge Infrastructuring in the Large-Scale: Sparring Partners and Reflective Spaces in Participatory Design

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Abstract

This paper explores how participatory reflection and knowledge sharing on the usage of Participatory Design (PD) and co-creation approaches can be enabled across distributed health-IT research consortia. Based on qualitative data from an Accompanying Research Project (ARP) in a national funding program on hybrid healthcare systems in Germany, we examine how thinking about using, attitudes towards, and research practices of PD can be supported beyond the project level – through infrastructuring practices that foster connection, reflection, and mutual learning across institutional boundaries. Rather than engaging in PD directly, the

ARP operated as a sparring partner: a reflexive actor who facilitated meta-level dialogue, questioned assumptions, and created spaces for cross-project resonance. Through informal relational infrastructures the ARP extended the so-called "third space" of PD into a networked context, supporting agonistic reflection and shared methodological inquiry across diverse domains. Our findings contribute to ongoing discussions in PD about how to sustain participation under conditions of scale, fragmentation, and governance pressure. We argue that enabling participation in such contexts requires not only methodological guidance, but also new supportive roles and reflexive infrastructures that maintain the conditions for epistemic negotiation. By conceptualising the sparring partner as a novel role within PD ecosystems, this paper offers both theoretical and practical insights into how participatory reflection can be infrastructured across complex, multi-actor settings.



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CCS Concepts

• **Human-centered computing** → **HCI theory, concepts and models**; **Empirical studies in HCI**; **Empirical studies in collaborative and social computing**; • **Applied computing** → **Health care information systems**.

Keywords

participatory design, infrastructuring, knowledge sharing, accompanying research, healthcare technologies

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1 Introduction

The COVID-19 pandemic accelerated digitalization across multiple sectors [12], including healthcare [24]. In response, large-scale research programmes increasingly call for participatory approaches to ensure relevance, legitimacy, and impact [28, 34]. Yet, when participation becomes a governance mandate in large, interdisciplinary research networks, as in recent mission-driven funding programmes in Germany [86], it confronts structural, epistemic, and organizational tensions that challenge established PD practices [23, 45]. It also raises questions concerning the relationship between policy and practice [39]: while policy is often assumed to result from design outcomes, less attention is paid to how policy informs those outcomes. This paper examines how participatory reflection and knowledge exchange policies can be enabled across project consortia, disciplines, and institutions. We focus on Accompanying Research Projects (ARPs), increasingly embedded in national research programmes to support cross-project knowledge sharing, reflection, and learning. ARPs maintain their own scientific agendas while being relationally intertwined with the research conducted within their funding lines, fostering mutual exchange and shared development [22, 29, 70]. Rather than engaging in PD directly, ARPs facilitate the conditions under which participatory practices can be sustained in fragmented, time-limited research constellations.

Our study is situated within a German national funding programme on hybrid healthcare systems, involving 13 interdisciplinary consortia with almost 200 people from academia, companies, and practice partners, such as hospitals and care providers. Based on 3.5 years of qualitative data – focus group interviews, workshops, consultations, and informal meetings – we explore how an ARP helps building relational infrastructures for knowledge exchange and fosters spaces for reflexive participation under systemic constraints.

We conceptualize ARPs as part of emerging knowledge infrastructures [73, 83] operating across multiple levels: Supporting individual projects (micro), enabling cross-project collaboration (meso), and shaping conditions in broader research ecosystems (macro level) [30, 43]. We conceptualize the ARP as a “sparring partner”:

a role in which it does not actively co-design artefacts, but as an intermediary that enables methodological confidence and cultivates the epistemic and institutional conditions under which PD can take place by surfacing frictions, aligning divergent logics, sustaining distributed collaboration and mutual understanding. Here, “conceptualize” means developing a concept which is grounded in our empirical observations, but abstracted beyond individual cases to articulate a transferable role within PD projects. In doing so, we extend existing notions of the third space in PD [64] into meta-reflective infrastructures that enable cooperative as well as agonistic, cross-cutting dialogue.

This paper addresses the following research questions:

- (1) How can participatory reflection and knowledge exchange be enabled in large-scale, interdisciplinary research networks?
- (2) How can this process be governed through consortia that act as guiding and reflective partners across interdisciplinary research projects?

We contribute to methodological and conceptual reflections of PD by (1) theorising the sparring partner role as a novel form of participation-enabling infrastructure, that helps to collaboratively evolve policy in a recursive relationship with developing practices, and (2) offering conceptual and practical insights into how process-sensitive reflection spaces can be cultivated at scale, under real-world constraints of funding logics, epistemic fragmentation, and organizational complexity.

2 Related Work

Before analysing knowledge sharing possibilities in large-scale research networks, we outline the general funding infrastructure underpinning our study, and the role of ARPs within it. We then describe infrastructuring as an evolving space for exchanging ideas, following a participatory approach. Next, we examine how reflection on PD and knowledge sharing may be enabled in large-scale research networks and which frictions and hurdles may be associated.

2.1 Research Funding and Culture in Germany

The German research landscape is marked by strong interconnections between academia, industry, and government, to foster innovation [92]. Unlike more decentralised models in the USA, UK, France, or the Nordic countries [57], Germany combines bottom-up basic research funding, with strategic, application-oriented funding, aligning national goals in areas such as sustainability, healthcare, and digitalization [40, 47]. Recent policy shifts emphasise addressing societal challenges, aligning scientific content with lifeworlds and initiate a dialogue between different groups [86].

The Federal Ministry of Research, Technology and Space (BMFTR) commonly funds large interdisciplinary and intersectoral (industry and practice) consortia addressing societal challenges. Increasingly, these funding lines embed ARPs, operating alongside funded research projects with an independent mandate. ARPs aim to support cross-project coordination, learning, and synthesis by generating thematic, process-related, and integrated knowledge [22]. In practice, this involves networking, knowledge-sharing and dissemination, conducting meta-research and integrative evaluations [19, 25, 55, 77]. Collaboration with consortia is vital for ARPs, but

often shaped by structural constraints. Defila and Di Giulio [22] trace this back to an “arranged marriage”, where trust and mutual benefit are essential, yet must be built over time. This metaphor highlights the conditions under which ARPs operate: they must navigate between external accountability and internal trust-building, often surfacing frictions without jeopardising cooperation. Thus, ARPs’ value lies not in resolving tensions, but in holding open spaces where frictions can be productively negotiated.

Acting as facilitators or consultants, ARPs must maintain a strict boundary between their locally-defined role and their duty in external evaluation. Confidentiality and clarity of purpose are crucial to avoid misunderstandings, which can impede cooperation [22, 25, 77]. Beyond coordination, ARPs strategically inform future program design and policy development [70], relying on regular exchanges, such as digital workshops and in-person meetings, that foster trust and mutual understanding [48].

Christensen et al. [19] demonstrate how this approach involves collaboration in shaping both researchers’ roles and methods. Their work builds on Bergold and Thomas [8], emphasising partnerships among all participants. ARPs thus do not evaluate research processes, but foster reciprocal practice of researching and being researched. They can co-construct methodological reflection with projects and thereby shift balance from oversight to mutual learning, enabling projects to see their own practices from a new perspective. A key component is jointly defining the research framework and collaboratively developing it throughout the process, making ARPs both an organisational structure and a research approach that must be actively practised, negotiated, and continuously co-evolved with all stakeholders.

Examples include the work of Carros et al. [17], who highlight trust and safe spaces in participatory projects to reduce the risk of withholding honest opinions. Furthermore, Paluch et al. [70] introduced Research Practice Workshops (RPWs) as an effective tool to foster networks of practice [16] and establish a collaborative space for knowledge exchange. Such formats exemplify how ARPs make visible diverse logics across consortia and provide structured environments where these can be confronted and negotiated.

The creation and maintenance of ARPs constitute an ongoing socio-material infrastructuring practice, embedded in broader policy and funding structures [36, 81]. These networks can facilitate innovation and cooperation beyond institutional boundaries [76]. Thus, ARPs are neither neutral facilitators nor partisan advocates, but actors who cultivate infrastructures of reflection, making frictions visible, sustain dialogue across institutional boundaries, and enable embedding participatory approaches in everyday realities of large-scale research programmes.

2.2 Infrastructuring as a Lens for Participatory Design

The aim of PD in technology development is to involve those affected by a system in its design, ensuring meaningful embedding in everyday practices [46, 96] and enhancing acceptance, adoption and appropriation [72, 88]. Meaningful participation [11, 35, 51] requires recognising participants’ expertise and fostering open cultures that encourage discussion of both failures and successes; factors that shape motivation and project outcomes [56]. Classic critiques, such

as Arnstein’s [4] “ladder of participation,” highlight how tokenistic engagement can mask underlying power asymmetries. HCI and PD emphasised the need for reflexivity in participation: who initiates it, who benefits from it, and how power and knowledge circulate within these processes [91, 94]. Vines et al. [91] frame participation as a reciprocal knowledge exchange involving explicit and tacit forms, to foster shared learning environments [70]. Such environments, often framed as a “third space” [64], enable interdisciplinary dialogue and co-constructed meaning, necessitating sustainable, multidirectional participation structures, offering tangible benefits to collaborators [60]. Participatory spaces are therefore political: DiSalvo [26], building on Mouffe’s agonism notion [63], argues that PD entails negotiation among competing values, interests and epistemologies, rather than consensus. Complementarily, Light and Akama [54] emphasise care as an ethical and political practice sustaining relationships, trust and emotions in PD (see also [69]). These debates show how participation endures through managing tensions and relationships, positioning ARPs as key actors in enabling and sustaining reflective spaces across distributed projects. We build on this tradition, conceptualising ARPs as cultivating a reflexive meta-third space where consortia and funders negotiate orientations. Yet, in large-scale research programmes governed by funding structures and institutional constraints, maintaining such spaces poses distinct challenges.

These concerns resonate with broader debates on how design and research are shaped by certain economic logics, and how such influences might be counterbalanced [9, 38, 58]. As Dantec and DiSalvo [21] noted, infrastructures must support the emergence of publics, i.e., collective collaborators who meaningfully participate in discourse and shape their own futures. As no single conclusive solution exists [74, 87], PD requires knowledge exchange, critique, negotiation and reflection on own democratic processes [41, 49, 51].

To address this, scholars introduced infrastructuring [73, 84], which shifts focus from discrete design interventions, to long-term cultivation of socio-technical resources that sustain participation, negotiation, and appropriation often beyond initial project boundaries [21, 85]. This perspective broadens innovation [75] from a technocratic to a socio-technical process, involving articulation of practices, negotiation of meanings, and support for appropriation [10, 71, 72]. Infrastructuring views technologies as evolving socio-technical systems, emphasising the ongoing, situated, and participatory nature of infrastructure development [73]. This aligns with Ehn’s perspective, emphasising a shift in PD from designing merely functional systems to cultivating environments that support design in everyday use [27]. Even in early phases, infrastructuring includes technical, spatial, and social dimensions that enable ongoing engagement. Technical systems are not conceived as static artefacts, but as evolving infrastructures embedded within socio-technical processes [84]. This creates an interplay between infrastructuring and PD that is also relevant for ARPs: bringing people together to exchange knowledge and enabling different stakeholders to reflect on challenges in order to create socio-technical innovations. Infrastructuring can therefore also be seen as a form of PD [21], while participatory reflection itself becomes an infrastructuring activity – especially in research networks where participation is mandated but not structurally supported. Rather than designing

artefacts, actors may instead design conditions for PD, enabling mutual learning and collective sense-making over time.

The concept emerged from studies on information infrastructures, highlighting their socio-technical and relational nature rather than conceiving them as mere technological artefacts [65, 83]. Karasti and Syrjänen [44] and Karasti et al. [42] coined the term *infrastructuring* to emphasize its ongoing, processual and long-term qualities, particularly the need to align design with extended community practices and to account for the “installed base” of existing infrastructures. In their studies *infrastructuring* was understood as growing infrastructures through trust, shared practices and long-term responsibility. Later work extended this perspective: Pipek and Wulf [73] conceptualised organizational IT systems as work infrastructures that users continuously adapt. In community contexts, the Malmö Living Labs [9], exemplify *infrastructuring* as creating open-ended constellations that support ongoing participation. These examples illustrate how *infrastructuring* evolved from studying large technical systems to a PD approach concerned with enabling ongoing, situated, and democratic processes of socio-technical innovation. Importantly, *infrastructuring* introduces a temporal perspective, shifting attention from discrete “project time” towards “infrastructure time” [42], i.e., the long-term cultivation of relations, practices and resources sustaining participation beyond immediate design interventions.

A related body of work extends this lens through the Living Lab literature. Schuurman [80] introduced a three-layer model distinguishing micro (co-design methods), meso (innovation projects), and macro level of (Living Lab constellations) levels. This layered perspective illustrates how participation is structured across scales of practice, governance, and infrastructure. Akasaka et al. [2] further highlight platform-level Living Labs that sustain collaboration and social transformation. Their canvas tool supports the management of macro-level infrastructures that host and connect multiple meso-level projects, emphasising sustainability and systemic impact. Living Labs thus institutionalise *infrastructuring* at multiple levels, yet remain focused on artefact-centred innovation projects.

We build on this layered perspective but extend it to the role of ARPs in large-scale, policy-driven research programmes. ARPs operate across similar levels, supporting reflection within individual projects (micro), enabling cross-project collaboration (meso), and shaping participation conditions within research ecosystems (macro). Unlike formalised Living Labs, ARPs emphasise informal and relational practices, such as trust-building, cross-disciplinary negotiation, and sustaining spaces of reflexivity.

Their contribution lies not in designing artefacts, but in enabling and maintaining conditions for PD, highlighting a shift: from “doing design” to “making design possible” across distributed systems.

2.3 Enabling Reflection and Knowledge Sharing in Large-Scale Research Collaboration

Effective knowledge sharing is essential in interdisciplinary collaborations. However, the situated and tacit nature of knowledge complicates its transfer across disciplinary or institutional boundaries [13, 66, 95]. Open Science frameworks aim to address this by promoting transparency, accessibility, and reusability of research data [20, 31]. While such approaches can foster collaboration [59, 90],

they raise ethical concerns, especially in participatory health research [89]. Key tensions include participants’ anonymity maintenance, consent, and legitimacy reduction of decontextualised qualitative data [90]. Therefore, Mosconi et al. [61, 62] propose data stories, as narratives that situate data within its original context, offering a more relational form of openness. These considerations are central to ARPs, that mediate between research projects and promote transparent sharing to support mutual learning. Such exchange requires overcoming competitive thinking and building trust. Bektaş et al. [6] outline a framework for this, emphasising trust-building, understanding project needs, and aligning collaboration styles and organisational processes. Effective strategies should combine tools, that support both design work and daily routines, ultimately facilitating knowledge-sharing.

Concepts such as “Communities of Practice” assume that individuals with shared interests come together in collaborative settings, and develop collective identities, shared practices and spaces for mutual learning through ongoing interaction [53, 95]. Related notions like “Networks of Practice”, describe distributed collaborations across institutional boundaries [16]. Both highlight shared practices, tools, and vocabularies (see also [68]) as foundations for knowledge transfer, mutual learning and meaningful participation [5, 15]. Barley and Kunda [5] illustrate how loosely connected professionals can build resilient networks that enable mutual learning, even across institutional boundaries. However, such communities do not emerge naturally in large-scale, policy-driven programmes, with heterogeneous projects. Here, ARPs can deliberately cultivate shared vocabularies, create entry points for mutual learning, and bridge disciplinary and institutional divides that would otherwise inhibit the formation of such communities.

In large-scale research networks, many projects operate in parallel with little formal integration. Yet, their societal and scientific value often hinges on mechanisms for reflection and transfer. ARPs can act as enablers of socio-technical infrastructures for collaboration, facilitating shared language, reflective spaces, and exchange formats that connect otherwise siloed efforts into broader knowledge ecologies [15]. They can support documentation of situated knowledge, and align heterogeneous actors around shared goals.

By drawing on theories of knowledge sharing and open collaboration, ARPs help cultivate sustainable innovation beyond individual outcomes, enabling knowledge translation, contextualisation, and long-term relevance. Extending the logics of Communities of Practice and Open Science, ARPs function as intermediaries that translate between normative ideals, local practices, and policy requirements. In doing so, they transform fragmented project outputs into shared, reflexive infrastructures of knowledge; an aspect insufficiently addressed in prior literature on knowledge sharing.

3 Methodology & Setting

We reflect on an ARP collaborating with 13 research projects (almost 200 researchers) across Germany. Limited travel resources, required adapting established knowledge-sharing formats to online environments. Different formats (Section 3.2) were explored to foster cross-project networks and support PD activities. The ARP’s focus was on providing a theoretical basis for utilising participatory methods in health-oriented IT design that acknowledges diverse

and complex practical contexts. An iterative support process was performed (see Fig. 1) to derive, adapt or re-establish services for the projects from (1) services already provided and (2) the experiences and results of the ARP activities. These reflections also informed the conceptual design of the empirical studies (group interviews and online surveys). Thus, service and research were systematically linked. The iterative support process was divided into three phases, based on the Design Case Study approach by Wulf et al. [97], combining learning, application, and reflection:

- (1) Initial phase: Familiarising with projects, their participation concepts, and support needs through group interviews, kick-off events, and initial RPWs [70]. This established a foundation for methodological exchange and networking.
- (2) Design and development phase: Targeted support for implementing and adapting participatory approaches. The ARP assumed a coaching role (later identified as a sparring partner role (Section 4.3.2)), facilitated cross-project exchange, and documented findings for subsequent adaptation of participatory formats.
- (3) Evaluation phase: Systematic reflection on participatory experiences using a theory-based framework to identify success factors and inform the further development of health-related IT PD. Analysing and disseminating results aimed to enable sustainable transfer of knowledge and practice.

This structured approach supported the individual projects while contributing to the conceptual development of participatory innovation in healthcare.

3.1 Sample

Initially, the ARP collaborated with eight research projects (P1-P8 in Table 1), focused on hybrid interactive systems in healthcare. After about 1.5 years, five additional projects addressing long- and post-COVID diagnostics were integrated.

Each project involved 3 to 7 partners, comprising academia, medical partners, and companies. Table 1 provides an anonymised list of projects (IDs), showing the number of partners (and staff in brackets), and types of institutions involved.

3.2 Formats

To enable knowledge sharing in a large-scale research network, we employed a multi-method approach combining a research component (group interviews and online surveys – both qualitative analyses) and a service component (RPWs, coffee meetings, network symposia, individual consultations). Research and service were strongly interconnected and informed each other, highlighting the reflexivity of this approach. Findings and reflections formed the basis for further analysis and, in turn, led to iterative adjustments to the formats and content of the interview guides and online surveys. This enabled spaces for agonistic dialogue, where competing perspectives on participatory methods could be openly negotiated, while informal coffee meetings offered low-threshold space for raising concerns that might not surface in formal settings. Below, we detail the data collection process and subsequent analysis steps.

- 21 **group interviews** with all projects; N=126 participants; disciplines: technology, design, usability, social sciences, nursing and health sciences, medicine, and therapy (from science,

application, and industry); objective: define the structures required for effective collaboration within the funding line; interviews were recorded, transcribed, pseudonymised and complemented by postscripts [52].

Group interviews made the amount of interviews (with 126 participants) manageable and allowed observing interdisciplinary dynamics; clarify responsibilities (not everyone hat to answer every question); mutual learning through dialogue.

- 13 **RPWs** (11 online, two in person adjacent to networking symposia; half a day; bi-monthly) were a central and recurring format for exchanging ideas, discussing and providing brief methodological and content-related input [70]. Led by the ARP; project staff of the collaborative projects were able to attend according to their needs and interests; content tailored projects and their current project phase, based on analysis of their project applications, informal talks, interviews and feedback from RPWs; objective: to facilitate interactive exchange on eye-level that offers direct added value for the projects, while also integrating the generation of knowledge and experience reports; methods: presentations, interactive formats (e.g. world cafés), open discussions, coaching; protocols and reflection sheets jointly filled by members of the ARP, online evaluation afterwards.

RPWs enabled methodological guidance and thematic discussions. The format was chosen due to positive experiences in former projects and their potential of enabling a knowledge sharing and negotiation space as described by Paluch et al. [70].

- Four annual **networking symposia** (first online due to COVID-19), obligated by the funder (co-organiser); objective: cross-network communication, collaboration and discussion of current statuses and prototypes. Each focused on a specific development phase (requirements analysis, co-design, appropriation). Activities included practice-based keynotes, project presentations, workshops, plenary discussions and doctoral colloquia; Notes were taken for post-analysis. Outcome: Enabling trust-building and deeper exchange than in online sessions.
- Results of the interviews and RPWs led to the introduction of an online **coffee meeting** format, facilitating networking and exchange between projects; background: Not all issues and challenges that arose in individual projects could be discussed within RPWs due to limited time. After positive feedback, the coffee meetings were offered regularly. They allowed for ad hoc discussions of project issues, which were systematically documented and processed to improve service.
- Five **individual consultations** were carried out, when projects directly requested in-depth methodological support for a particular challenge and asked for input from outside the respective research project. ARP staff documented the discussions.

The choice of formats was not predetermined, but guided by pragmatic and conceptual criteria: available resources, travel restrictions, project needs and current development phases. Most RPWs



Figure 1: Overview over tasks of the accompanying sparring partner

Table 1: Overview of the accompanied projects

ID	Partners (number of staff involved)	Project focus
P1	2 universities (7), 2 companies (4), 1 medical partner (3)	AI-based virtual agents
P2	1 university (8), 2 companies (5), 2 medical partners (3)	Intelligent care: integrated sensors & wearables
P3	1 university (5), 3 companies (8), 2 medical partner (7)	Multimodal interaction in virtual psychotherapy
P4	1 university (3), 2 companies (11), 1 research institute (4)	Interactive assistance system for face-to-face therapy, video therapy or self-training
P5	3 universities (8), 2 companies (4), 1 medical partner (3)	Care through multimodal systems and robotics
P6	2 universities (3), 2 companies (5), 2 medical partner (3), 1 research institute (1)	AI-based monitoring
P7	1 university (2), 2 companies (7), 2 medical partners (4), 1 research institute (4)	Telemedical care using AI
P8	2 universities (8), 4 companies (7), 1 medical partner (2)	Hybrid assistance system for outpatient care based on AI
P9	1 university (3), 1 company (2), 1 medical partner (8)	Symptom recording via voice input and vital signs
P10	1 university (2), 1 medical partner (3), 2 research institutes (7)	Multimodal data profiles created with interactive VR
P11	1 university, 2 companies, 1 research institute	Optical system for non-contact measurement and transmission of vital parameters
P12	1 university (4), 1 company (1), 1 medical partner (2)	App-based avatars for voice-based symptom recording
P13	2 universities (7), 1 company (1), 2 medical partners (6)	Adaptive and hybrid platform, for information about health conditions

took place online to ensure accessibility across geographically distributed teams. Iterative feedback loops were central for methodological decision-making. For instance, informal coffee meetings were introduced only after repeated indications in interviews and RPWs that projects lacked space for ongoing low-threshold exchange. Methodological decisions were thus situated at the intersection of (1) structural constraints, (2) emerging project needs, and (3) reflexive adaptation based on prior experiences. This ensured that formats remained feasible and epistemically relevant for supporting participation in heterogeneous research contexts.

3.3 Data Analysis

Data analysis was conducted by the ARP's interdisciplinary team. Depending on the state of research and gaps, the team used partly a systematic and iterative (qualitative data collection), and partly an exploratory approach (interaction formats) to ensure a comprehensive and scientifically sound investigation of challenges and needs identified by the consortia. Data from the interaction formats (workshops, network symposia, coffee meetings and consultations) and qualitative data collections (interviews) were consolidated and analysed for cross-cutting issues. The accompanying notes were subjected to a process of review, commentary, and exploratory analysis to enable a comprehensive and open-ended exploration of cross-cutting issues. Interviews were transcribed, anonymised, and coded through structured content analysis [52] using a coding system based on the interview guide. An inductive thematic coding approach was then used to analyse the data set (using the consual coding approach). Two researchers independently coded each interview (four coders total), meaning they worked separately without consulting each other during the process. Rotating pairs ensured that every coder collaborated with each other at least once. Following the first round, each pair compared and discussed their coding to reach agreement. The team then refined the codebook, followed by a second coding round. The iterative team-based procedure, cross-case comparison, and reflexive discussions helped mitigate bias. One of the codes found, included the wishes and support needs expressed to the ARP, which was analysed for this study in greater detail.

Following the coding phase, the data was grouped into overarching categories, providing a structured framework for analysis. Categories were then reviewed and validated to ensure relevance and completeness in relation to the research questions.

The analysis aimed to increase the robustness and validity of findings. Therefore, triangulation between data sources and interaction formats was undertaken throughout. By cross-referencing findings from different methods, different perspectives were considered in the analysis and potential biases were mitigated.

3.4 Ethics

Collaboration between individual projects and the ARP raised ethical and institutional challenges, including intellectual property. Joint activities risked fostering competition and concerns about data ownership and reducing openness. To mitigate this, the ARP clarified not being interested in accessing or using project data. However, there were no contractual restrictions regarding data use. Thus, cooperation relied on trust, transparency, and clarity about

the scope and purpose of our work. Breaching this trust would have jeopardised the entire collaboration, highlighting the fragility of such arrangements.

All participants in the research component received detailed study information and provided informed consent, with the option to withdraw at any time. Personal and sensitive data was pseudonymised and stored on secure servers. The ARP obtained ethical approval from a university ethics committee (Approval No. GEHBa-202312-V-154).

Power asymmetries were a further concern, as collaboration with the ARP was part of each project's funding, yet voluntary. We emphasised that the ARP was not mandated to evaluate or monitor the projects, but acted as a reflexive companion, aimed to create a space where participants felt able to share successes and failures.

As an ARP, we influenced the research network by designing workshops, posing questions, and synthesising findings. We therefore treated reflexivity as an ethical responsibility, regularly revising our methodological decisions and their implications for trust, openness, and participation.

This section documented the ethics of our research process. Section 4.1.1 (Results) discusses how ethics emerged as a structural challenge for the funded projects.

4 Results

Enabling knowledge sharing within large-scale research networks, especially on the highly sensitive and contextual topic of PD in healthcare, faces frictions and constraints, but offers high potential for collaboration and innovation. Our analysis highlights three major themes in how the ARP enabled (and at times struggled with) this process.

First, tensions arose between governance requirements and individual project practices, particularly around ethics approvals, interdisciplinary collaboration, and resource allocation. Second, building a knowledge infrastructure highlighted the value of social and thematic exchange and the limits of digital platforms. Third, the ARP acted as a mediator across project boundaries and methodological sparring partner, enabling projects to implement participatory approaches under real-world constraints. The following subsections illustrate how frictions and enablers co-shaped the ARP's role and participating infrastructures.

4.1 Governance vs. Individual Practices

The first findings concern the tensions between formal governance frameworks (including funding expectations for participatory development) and project-level realities. Ethics approval processes, data protection requirements, and interdisciplinary frictions often delayed or constrained participatory practices, while limited resources intensified these challenges. This subsection traces how such structural barriers shaped PD and how projects navigated them.

4.1.1 Ethics Approval and Data Security as Structural Challenges for Innovation. While ethics protects participants, their data and scientific integrity [37], the institutional processes involved in securing ethics approval and implementing imperative data protection measures demanded greater time and coordination than initially

anticipated, even with ethics experts in the consortium. The consequences were substantial: delays of up to a year in fieldwork, the need to redesign timelines, and reallocate internal resources. These structural hurdles severely limited early participatory engagement in many projects.

To address these issues, dedicated RPWs on data protection (RPW 3) and ethics (RPW 4) sparked engaged discussions. The projects expressed frustration over rejections and inconsistent interpretations by ethics committees. Multiple coffee meetings (1, 2, 5), interviews (5, 6, 10) as well as RPWs and networking symposia circled back to issues such as pseudonymisation, encryption, and ethics proposals, leading to highly emotional statements:

„They won't even let us do research! If Germany is to carry out research, appropriate offers must be available.“
(Coffee Meeting 5, medical professional)

Here, a medical professional expressed concerns regarding the demanding data security requirements on technical infrastructure, after their ethics application was rejected. These concerns were not aimed at ethical principles themselves, but at perceived challenges posed by institutional processes, which many considered more stringent than necessary. Legal constraints around hosting environments and general data protection regulation (European regulation on information privacy) compliance highlighted the need for publicly funded, secure infrastructure in RPW 3. One technician emphasised that US-based tools – though often praised for their usability – were not permissible in German healthcare, while viable European alternatives are still developing, with in-house solutions lacking allocated budgets. Participants therefore expressed a desire for greater awareness from project funders, as these challenges involve considerable additional work and necessitate adequate resources:

„Solutions that break the law are not solutions that can then be brought into reality [...]. If the ministries want innovation and AI, then it needs statements from the research landscape.“ (RPW 3, HCI professor)

Projects hoped that highlighting these challenges through the ARP could influence future policy by connecting projects facing similar issues. Participants recommended standardised ethics templates to streamline approval processes and facilitate medical certification (e.g., Interview 7). While ethical standards remain essential, participants noted that current institutional frameworks occasionally hinder timely and effective participation (e.g. Coffee Meeting 5).

4.1.2 Interdisciplinary Collaborations. Another key friction arose from tensions between academic, clinical, and commercial logics, with companies often deprioritising participation despite formal expectations:

„So our resource planning was essentially geared towards achieving the technical goals that we described. And the co-creation was, so to speak, on top of that.“
(Interview 20, technician)

While researchers and healthcare professionals emphasised the value of participatory processes, company partners sometimes struggled to see how these methods could fit within fast-paced development cycles:

„You don't earn money by being slow. [...] The therapeutic goals and market goals don't align.“ (Interview 17, technician)

This mismatch occurred between sectors, but also within consortia. It became clear that collaboration required ongoing negotiation of timelines, values, and expectations. To support this, the ARP facilitated targeted workshops with individual projects and organised RPW 8 on interdisciplinary collaboration and power dynamics. The strong participation in this workshop underlined the need for structured spaces where mutual understanding could be built and conflicts constructively addressed.

4.2 Building a Knowledge Infrastructure

A second theme addresses the ARP's efforts to establish a knowledge infrastructure that could sustain collaboration across the funding line. This involved designing opportunities for socialising and thematic exchange, experimenting with synchronous and asynchronous tools, and negotiating the limits of openness in potential competitive research environments. The subsection illustrates both successful knowledge flows and persistent obstacles to shared learning.

Given the funding line's emphasis on participatory approaches, it was essential that this knowledge infrastructure was co-developed in a similarly participatory manner. The ARP therefore placed careful emphasis on identifying common needs across projects and creating structures that supported (1) social interaction, and (2) thematic and methodological exchange. A mix of event formats and digital tools was used to support these goals.

4.2.1 Socialising: The Need for Inter-Project Exchange. One frequently voiced need was to network and foster interdisciplinary exchange, mutual learning, and long-term collaboration. Many projects expressed interest in sharing experiences and co-developing ideas, including joint publications or follow-up proposals (RPW8, Interviews 6 & 9). For example, one interviewee emphasised the value of bringing academic and start-up perspectives together to develop practical, marketable solutions (Interview 4), while another consortium wanted to co-organise workshops with partner projects at national conferences (Interview 9).

These ambitions pointed to a broader desire for shared collaboration and reflection. However, exchange was often dependent on thematic overlap. The first eight projects were diverse in terms of both technology and application context, limiting concrete collaboration. In contrast, later projects with shared foci – such as the use of virtual avatars (P1 & P12) or long-COVID-related research – enabled deeper collaboration, including sharing validated questionnaires and co-developing instruments like patient-reported outcome and experience measures [7]:

„[...] I can imagine that we could possibly benefit from the data from other projects and vice versa.“ (Interview 10, medical professional)

These cases showed that thematic proximity can act as a catalyst for more substantial collaboration within sub-communities and that cross-cutting issues need to be identified, to address common challenges.

4.2.2 Thematic Input and Exchange. Another central need was peer learning and expert input, particularly on participatory methods, regulatory questions, and interdisciplinary coordination. Given the funding line's participatory requirements, it is unsurprising that methodological consultation was in high demand. Five projects sought one-on-one consultations with the ARP for feedback on PD methods.

However, this required trust to be built first, which can be difficult if projects only know each other from online meetings. As one participant noted:

"You're more likely to [make an enquiry] if you get to know the people personally. [...] It's rather difficult to do it anonymously via screens." (**Consultation 3, PhD student HCI**)

Sharing uncertainties or failures – essential for reflective practice – was considered highly relevant by the projects, but could prove especially difficult when potential competitive dynamics exist between consortia or with industry partners:

"What is interesting for me personally or in other projects: What actually goes wrong?" (**Interview 6, PhD student, business informatics**)

These insights suggest that creating spaces for open, trust-based dialogue – even about failure – is a critical design requirement for reflective infrastructures, but still comes with frictions that need to be considered. Some professors perceived and named these infrastructures as being particularly important for early-career researchers.

"There are also some doctoral students here who also want to publish, they have to go outside. If something like this [were possible] between the various projects that are all held together here, perhaps a workshop could be organised so that presentations could be made there." (**Interview 5, professor AR**)

The desire for more public-facing work, e.g. at national and international conferences, was also considered critical. Therefore, project members, especially early-career researchers, should collaborate closely to benefit from one another and disseminate results of the funding line to advance their own careers.

4.2.3 Enabling Knowledge Flows Within the Funding Line. To enable knowledge flows, the ARP organised multiple synchronous formats: RPWs, coffee meetings, and informal activities at on-site networking symposia, including social events such as joint digital cooking and 'walkshops' (walk and talk for smaller groups). These were complemented by technical infrastructures for asynchronous exchange and dissemination, including a members-only social media platform and a website with project information, news, podcasts and explanatory videos.

Early in-person symposia were a key building interpersonal relationships. One participant recalled:

"Yes, I found that very nice, especially at the networking meeting [...]. We got into an exchange and wanted to share the questionnaires with each other. [...] And I actually think that was a huge added value, simply being able to think beyond our own project." (**Interview 11, medical professional**)

These connections created a noticeable shift: where early RPWs were often slow to start, later sessions saw more dynamic exchanges. A telling moment came at the start of RPW 6:

"Oh, I already know everyone here!" (**RPW 6, PhD student, business informatics**)

Such moments of familiarity laid the foundation for co-authored papers, practical peer support (e.g., ethics applications), and joint conference presentations. Across formats, participants emphasised the value of low-threshold, informal interactions:

"The coffee meetings are very valuable. This free exchange is useful and helpful." (**Coffee Meeting 2, professor, engineering**)

In the long term, these formal and informal exchanges aim to familiarise with each other, mutual learning and ultimately building a community of practice, collaboratively working on similar topics and challenges.

4.2.4 Limits of Knowledge Exchange. While synchronous formats proved effective, asynchronous tools (e.g. the digital social network) faced greater challenges. Although several projects explicitly requested a digital platform for exchange (Interviews 6, 9, 11), usage remained limited. The key barrier was integration into daily routines:

"It shouldn't be something where you log in [...]. It just has to be integrated into everyday life [...]." (**Interview 9, technician**)

Participants compared ideal systems to WhatsApp¹ or Slack², platforms that are immediate and embedded, not standalone. Suggestions to use Microsoft Teams³ were hampered by institutional restrictions, making unified access across the funding line impossible.

Contributions in knowledge exchange formats mostly came from academic partners, while industry actors participated less, likely due to time constraints, competitive constraints or the focus of ARP events. For example, RPWs required significant time, which some company partners could not accommodate. Technicians in particular felt underrepresented:

"The research practice workshops tend to address one perspective. Either technology or health science. [...] the technicians often said: 'Oh, that's more for you. Take part in it, you have more experience.'" (**Coffee Meeting 3, PhD student, engineering**)

This PhD student claimed, that even the term *research practice workshop* may have signalled academic exclusivity. This highlights the need for target-group-specific formats reflecting the funding line's interdisciplinary and cross-institutional reality.

4.3 Accompanying Research Project as Mediator and Sparring Partner

The ARP's role was shaped by multiple expectations. While PD was a central principle of the funding line, and the ARPs' task was to support the other projects in the implementation of participatory

¹<https://www.whatsapp.com/>

²<https://slack.com/>

³<https://www.microsoft.com/microsoft-teams/>

approaches, the ARP was not directly involved in co-designing technologies or individual participatory processes. Its two main functions were as a mediator across projects and with the funder, and as a sparring partner for methodological reflection.

As a meta-project, the ARP had a unique vantage point: it could maintain a broad overview of developments, identify shared challenges, and initiate connections where thematic overlaps or synergies emerged (as described in Interview 6 and 13). At the same time, it was expected to be a critical companion, offering methodological guidance, asking probing questions, and supporting reflection on participatory approaches across diverse contexts.

This subsection details how these dual roles unfolded in practice, including productive and frictional dimensions.

4.3.1 Mediating Across Boundaries. As a mediator, the ARP was expected to facilitate connections among projects and between projects and the funder. Several interviewees expected the ARP to identify overlapping needs and challenges and actively initiate opportunities for exchange. For instance:

"Creating networks with other projects [and] other stakeholders. I think that's something that takes us out of the bubble of the research project a little bit and is an important added value of the accompanying research."
(Interview 6, PhD student, business informatics)

In practice, this involved identifying events, topics, methods and best practices (as shown in Section 4.2.2) that might be relevant across projects. One such case was the Post-COVID symposium organised by P13. Recognising its relevance for other projects in the same domain, the ARP discussed it during Coffee-Meeting 9 and then sent out a joint invitation on behalf of P13 to the entire funding line. This was well received:

"So when the other project invited to the AI workshop on regulatory affairs [within the Post-COVID symposium], I went because it affects us too." (Interview 11, project management, research institute)

The event also prompted informal collaboration: a local research institute affiliated with P11 invited interested parties of the symposium to visit a pre-event, to get in touch and deepen mutual understanding. This exemplifies how active mediation by the ARP could generate added value, fostering interdisciplinary cooperation, lowering communication barriers, and promoting knowledge-sharing.

As described in Section 3.2, representatives of the funding agency were present at on-site networking symposia, enabling direct contact between project members and funder. Still, many project participants expected the ARP to mediate on more systemic challenges – particularly concerning ethics approvals and regulatory constraints (see Section 4.1.1).

However, this mediation role was marked by friction. From the outset, the funder had made it clear, that they could not intervene in regulatory issues. This limited our ability to act on the projects' recurring concerns, especially in cases where mediation was expected to result in tangible support. While we could surface such challenges and facilitate knowledge exchange around them, this did not lead to any structural changes or support from the funder.

Nevertheless, the funder supported our efforts, giving us freedom to develop innovative formats during symposia. While we

could not mediate all content-related issues, we shaped the collaborative space and fostered interdisciplinary engagement. Despite these limitations, some projects continued to see potential in this mediation, particularly for shaping future policy. For example, it was suggested that the ARP could collaborate with projects and the funder to co-develop ethical guidelines, to proactively address recurring regulatory issues (Interview 5). This illustrates the ARP's multi-level approach: supporting individual projects (micro), shaping collaboration in the funding line (meso), and contributing to policy change (macro), with each level influencing the others.

4.3.2 Sparring Partner for Participatory Methods. Beyond mediation, the ARP was viewed as a methodological companion, a sparring partner for reflection on PD. Rather than prescribing solutions, it engaged in dialogue, challenging and co-developing emerging practices. This infrastructuring work aimed to strengthen projects' reflexive capacity rather than deliver predefined expertise, which was crucial where participatory approaches were required but difficult to implement. As one project manager noted:

"And I think you're still the professionals in: How can I conduct and organise such workshops? How can I really present design thinking approaches, co-creation approaches with the patients again? And I also find it helpful to know that now: I can call you. Sparring partners, once we have presented the design. Does it fit or have we forgotten something?" (Interview 11, project management, research institute)

Five of the 13 projects sought individual consultations with the ARP to refine their participatory methods. These online meetings, often based on shared preparatory documents, allowed the ARP to act as a reflective partner – challenging assumptions, offering suggestions, and referencing practices from other projects.

These exchanges were described as a core benefit of the ARP's involvement (see Interviews 5 & 11). However, the visibility and accessibility of this role were not always clear. One interviewee only realised during a conversation that such methodological sparring was available:

"[...] I actually didn't realise that, even if we were planning a kind of focus group, that you would also be willing to show or act in an advisory capacity [...]. So for that reason alone, I thought the conversation was great, because now I know, okay, if I have any questions, I can just get in touch." (Interview 11, medical partner)

This marks a potential area for improvement: future ARPs could more proactively and clearly communicate their availability as sparring partners. When effective, this role fosters methodological confidence, reflection, and learning across the network, supporting participatory implementation.

5 Discussion

5.1 Enabling Knowledge Sharing in Large-Scale Research Networks

In our study, knowledge sharing across consortia emerged less through formal structures, than through informal, relational infrastructures fostering resonance, trust-building, and mutual visibility.

The coffee meetings – modelled after spontaneous hallway / coffee-corner conversations [14] – gradually evolved into what Wenger et al. [95] describe as a “network of practice”: an emergent structure of shared concerns, overlapping vocabularies, and informal communication that supported learning across project boundaries.

This aligns with longstanding findings in CSCW and organizational theory, emphasising the role of informal collaboration and shared social worlds for knowledge transfer [1]. Participants valued the informal tone and open-ended nature of coffee meetings as safe spaces to share work-in-progress, ask questions, and reflect on approaches. These settings functioned as relational infrastructures: socially enacted rather than technical spaces supporting weak ties and spontaneous connection, features essential for knowledge flow in loosely coupled research networks [32].

By contrast, the digital platform provided for exchange remained underused, illustrating an appropriation gap [72] and the difficulty of aligning generic tools with situated practices. Coffee meetings, however, became a critical infrastructure for shared reflection and collaboration. In this role, the ARP acted as an infrastructuring agent [82], cultivating social arrangements that enabled reflexive, cross-project dialogue. This confirms the centrality of informal, situated interaction in the transfer and negotiation of knowledge [33], especially in interdisciplinary and participatory settings where shared practices must be actively constructed [68].

These relational infrastructures existed within systemic constraints that simultaneously hindered and intensified the need for knowledge sharing. Participants described a mismatch between the epistemic logic of participatory research and the formal structures of funding and organizational processes. As Allert et al. [3] argue, traditional funding paradigms, with predefined outcomes and linear milestones, clash with the emergent, iterative, and unpredictable nature of PD. Projects are expected to deliver tangible outputs (e.g., policy recommendations or functional prototypes), but lacked flexibility to embrace constructive failure or reorientation – key aspects of meaningful PD. This tension requires constant articulation work [78] to keep projects operational under misaligned metrics and institutional pressures. While this limits time for knowledge sharing, it simultaneously increases its necessity.

This underscores a key insight: informal exchange should not be seen as supplementary but as integral to any sustainable knowledge-sharing ecosystem. Formats like coffee meetings, online cooking events, or workshops activated distributed knowledge networks and fostered emergent collaboration. However, they required ongoing care and responsiveness to shifting conditions – hallmarks of infrastructuring practice.

Thus, the ARP was not merely a facilitator of information flow but operated as a buffer and translator between program-level expectations and project realities, mediating different temporalities, discourses, and success metrics. Rather than managing knowledge top-down, it curated spaces where actors across the network could see and hear each other, and think together. In doing so, it enabled a form of networked learning that was emergent, contingent, and grounded in trust and shared meaning. This highlights knowledge sharing as an infrastructuring process rooted in care, maintenance, and situated improvisation.

5.2 Sparring Partner Instead of Co-Designer: Rethinking Reflective Roles in Participatory Design

PD traditionally involves multiple stakeholders, including researchers, designers, and those directly or indirectly affected by an intervention [79, 96]. Within the funding line, however, a new role emerged: the ARP assumed a meta-level, reflective position, supporting researchers who were mandated – sometimes for the first time – to implement participatory approaches in their disciplinary contexts.

In this capacity, the ARP did not act as a co-designer but as a facilitator of discursive spaces, encouraging critical reflection, methodological coherence, and cross-project perspective-taking. Participants described this role as a “sparring partner” (Interview 5 & 11) extending beyond methodological support to intellectual resonance [19].

This shift reframes the ARP’s function from doing design to making design possible. Rather than intervening in concrete design decisions, it worked infrastructurally, maintaining spaces for reflection, feedback, and collective sense-making. In doing so, it extended the third space of PD [64] into what we call a “meta-third space”: a second-order arena where not artefacts but epistemic, ethical, and institutional conditions of participation are negotiated. In large-scale, policy-driven research networks, such reflective infrastructures support researchers navigating participatory complexity, offer feedback loops, surface shared struggles, blind spots, and tensions. Thus, ARPs act not only as knowledge integrators, but as custodians of the network’s reflexive capacity.

Conceptually, this meta-third space aligns with DiSalvo [26] and Mouffe [63]’s notion of agonism, valuing dissent and tension over consensus and with Light and Akama [54]’s politics of care, which frames care as an ongoing ethical–political commitment to sustaining relationships and responsibility, and enabling spaces where reflection, mistakes, and contestation can occur, rather than mere harmony. Bringing these together, the meta-third space embodies infrastructures of reflection as both agonistic and caring: acknowledging conflict while cultivating the relational and affective conditions that allow participatory practices to endure.

Establishment of such spaces entails effort and friction [77], since differing timelines, disciplinary logics, or institutional expectations can complicate collaboration. Yet, this work brings significant value, by improving communication, supporting knowledge transfer and fostering additional scientific and practical insights through synthesis. Following Weiler et al. [93], we regard this as an investment in processual quality and learning rather than overhead.

The ARP’s contribution lies less in producing consensus than in holding open spaces for agonistic reflection [10, 63]. These spaces make visible cross-cutting issues, frictions and epistemological differences across disciplines and (even within) projects, not to smooth them out, but to use them productively. The ARP as sparring partner constitutes an infrastructuring practice that strengthens the integrity, adaptability, and long-term viability of PD in complex research ecosystems [27, 73, 84].

5.3 Positionality and Reflexivity

As recipients of the same funding scheme mandating participatory approaches, we were both embedded within the consortia's everyday exchanges and structurally linked to the programme-level agenda. This dual position created power asymmetries: participation in ARP activities was voluntary, yet tied to funder expectations and organisational hierarchies. Managing these tensions required ongoing reflection and transparency. We clarified that our role was not evaluative or linked to funder assessment (see [22, 25, 77]). Informal formats were deliberately designed to soften hierarchies and allow researchers to voice concerns that might remain unspoken in formal settings. Regular team debriefings helped us examine how our interventions could reproduce or mitigate such asymmetries, and to adjust facilitation strategies accordingly.

Recognising our position, we treated reflexivity as a shared and evolving practice, shaping both the projects and ourselves as ARP researchers. This underscores that participation infrastructures are inherently political, requiring constant attention to trust, positionality and the power dynamics that influence whose voices are heard [18].

6 Conclusion

PD is heavily influenced by organisational frameworks and regulatory measures, including ethical requirements, data protection, and inflexibility of funding programmes (see Section 5.1). Yet, few studies show how such policies affect PD practices. Here, PD was mandated by the funder, and its support explicitly institutionalised through an ARP. For the ARP, this meant facilitating PD and knowledge sharing in complex, heterogeneous settings – a well-known challenge given the multifaceted and situated nature of participation, shaped by temporal, spatial and cultural influences [50]. As Osterheider et al. [67] noted, even within one funding line, interpretations of PD vary widely, reflecting diverse interests, motivations, ideologies and commitments [51]. Consequently, there is no consensus on how PD policies should be implemented in large-scale contexts.

In this particular case, the ARP, functioning as a policy intervention for PD in technology development in healthcare, acted as a sparring partner for 13 research projects. Its role was not to define a uniform model, but to challenge assumptions and facilitate cross-project discussion and reflection. The objective was to nurture awareness of different possibilities, rather than prescribe methods. What emerged was not a unified model of participation, but an agonistic constellation, as described by Mouffe [63]: a productive tension between divergent understandings, interests, and approaches. Thus, the ARP's task was not to resolve conflicts, but to sustain spaces where competing positions could be articulated, negotiated, and reflected upon. This new role, we argue, enables more situated, iterative, and responsive modes of participation when policy and practice intersect.

The ARP also revealed entry points for policy-level impact. Across the funding line, projects articulated needs beyond their local contexts, such as standardised ethics templates, secure infrastructures for sensitive health data, and greater flexibility for participatory practices. While these demands have not yet led to

institutional change, their articulation demonstrates how meta-projects can act as recursive infrastructures: simultaneously supporting methodological reflection at the project level, mediating work infrastructures and informing the conditions for future participatory technology development in healthcare.

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Advisory Today, Co-decisive Tomorrow? Complementing the Participation Ladder in Smart City Innovation with Institutional Learning Perspectives

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Abstract

The question we explore in this paper is: What are the current constraints and challenges of ladder-based participation models in participatory smart city R&D, and how might learning-oriented approaches offer a complementary perspective? We explore this question through a year-long participant-observation study of a participatory research and development project focused on object recognition technology in public space in Amsterdam. This project not only engaged citizens in shaping urban technology but also challenged the professional, institutional, and political boundaries of what constitutes participation in the smart city. We identified six key developments that emerged during the course of the project and analysed how the participatory process was implemented across them. The results resonate with critical literature on participatory governance in smart cities, particularly the difficulty of sustaining citizen influence in co-decisive roles over time. We argue that the temporal dynamics of influence and institutional uptake observed in this case point to significant opportunities for collaborative and institutional learning in ladder-driven innovation projects.

CCS Concepts

• **Applied computing** → **Computing in government**; • **Social and professional topics** → **Socio-technical systems**; *Codes of ethics*; • **Human-centered computing** → **Participatory design**.

Keywords

smart city, participatory design, participation ladder, institutional learning

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1 Introduction

In this paper, we examine a participatory design project focused on object recognition technology used in public space in Amsterdam. Like many urban centres, the City of Amsterdam is dedicated to fostering a clean, safe, and liveable environment, using technology to achieve these goals. In particular, the city sees a future role for multi-purpose scanning vehicles to support the work of various internal municipal departments. The city administration's foundational vision behind implementing such technologies in public space is to ensure their responsible use. To achieve this goal, the Department of Digitisation, Innovation & Information has sought to improve the integration of the city's ethical principles¹ by rethinking their approach to procurement and the design of this urban technology. Since the City of Amsterdam is a key partner in a project focused on developing an integrated, value-based, multi-stakeholder design approach for the ethical implementation of smart city technologies² we, the authors of this paper, were able to be deeply involved in this process as action and design researchers.

In 2022, the Department of Digitisation, Innovation and Information operationalised its vision through a procurement initiative aimed at acquiring a new camera vehicle equipped with advanced object recognition capabilities for the Department of Monitoring and Enforcement in Public Space. The procurement process explicitly required that the providers of this vehicle engage in a long-term participatory research and development project with other stakeholders. This project included the establishment of a citizen panel in conjunction with four academic partners. A detailed participation plan was developed to ensure robust participation from the citizen panel, working in tandem with academic partners. It was deeply anchored in Arnstein's participation ladder framework [2],

¹<https://www.amsterdam.nl/innovatie/digitalisering-technologie/data/tada-waarden/>

²<https://humanvaluesforsmartercities.nl/>

since it was based on the municipality's ladder-based participation guide, which outlines various levels of participation outcomes and influence. The R&D project aimed at the highest levels: co-decisive processes that contribute to voice, making it an example of participatory design within municipal innovation.

The intensive nature of the project and the close involvement of researchers offer a valuable opportunity to examine how the legacy of Arnstein's participation ladder manifests in both the project plan and its execution. This opportunity enables us to scrutinise the emerging challenges of achieving co-decision-making at higher rungs of the participation ladder that truly enhance citizen voice in smart city developments [3, 10]. These insights allow us to investigate further the tendency to depoliticise or overlook issues emerging during the participation process that fall outside the scope of the ladder-based project [26, 27] and, in turn, allow us to explore whether additional theoretical frameworks, such as institutional or collaborative learning, offer valuable opportunities for practical application in addition to a participatory approach based on ladders [4, 5].

Based on these topics, we first provide a more thorough review of related work in the next section, with a particular focus on Arnstein's participation ladder and its relevance to smart city initiatives. This discussion leads to the research question we explore in this paper. In the subsequent Section 3, we dive into the context in which the Department of Digitisation, Innovation & Information decided to embark on this participatory R&D journey. The research approach, described in Section 3, outlines the data collection process and the analysis phases we followed. The participation objectives as described in the participation plan in terms of levels of influence and participation outcomes are summarised in Section 4. In Section 5, these objectives are evaluated based on the realised participation. Finally, in the discussion in Section 6, we reflect on the results of this evaluation in relation to the research question.

2 Related Work – Participatory Smart City Development

This section reviews the growing demand for high-level citizen participation in smart city development, emphasising its democratic and practical significance. It outlines key constraints, including institutional rigidity, tokenistic engagement, and the tendency to depoliticise disruptive input. The review then shifts to learning-based participation models, which treat participation as an iterative, reflexive process involving both citizens and institutions. These approaches offer a promising complement to ladder-based models by enabling bigger institutional change and more responsive urban innovation.

2.1 The Case for High-Rung Participation in Smart City Innovation

Recent scholarship emphasises the need for participatory processes that move beyond consultation toward co-decision making in smart city initiatives. The issue is the technocratic nature of many smart city developments, where citizens are framed as passive data sources rather than active agents in shaping urban futures [3]. Scholars argue that participation at higher rungs of influence is essential

not only for democratic legitimacy but also to ensure that technologies respond to situated needs, contested values, and the lived experience of urban inhabitants [10, 28].

This concern is particularly urgent given the risks of reinforcing existing inequalities through data-driven governance. Without meaningful citizen involvement, smart infrastructures can perpetuate governance asymmetries and deepen divides in access, trust, representation, and benefits [11, 24]. Participation, then, should not just be a way to legitimise technologies but become an approach to reframe them: empowering citizens to influence what counts as a problem, what knowledge matters, and whose values are built into digital systems [9, 13].

In this context, co-creation, living labs, and participatory design processes are often positioned as pathways to embed citizen voice at critical junctures of innovation. In particular, where public-private partnerships and commercial platforms shape urban data flows, citizen input into early framing decisions – not just user testing – becomes a democratic necessity [10, 23].

2.2 Barriers to High-Rung Participation in Practice

Despite these ambitions, it remains challenging to structurally integrate the voice of the citizen into decision-making. Institutional inertia, bureaucratic rigidity, and political considerations often restrict the room for manoeuvre. Participation is often limited to early ideation phases, while key strategic and budgetary decisions are predetermined or held beyond public reach [10, 28]. This temporal front-loading limits citizens' ability to shape project trajectories and can turn participation into a symbolic exercise aimed more at legitimisation than transformation [13, 26].

The professionalisation of participatory processes further complicates matters. Intermediaries (consultants, designers, or civic tech firms) may act as facilitators but also gatekeepers, mediating what concerns are seen as legitimate and which remain invisible. As Van Zoonen [27] illustrates, such filtering can lead to sanitised forms of engagement that do not accommodate critical perspectives or structural critiques. Participation can become a means of extracting data or behavioural insights, rather than a space for dialogue or disruption [14].

This tendency to depoliticise public engagement is deeply rooted in the logic of smart city governance itself. As Hayes et al. [12] argues, the desire for efficiency and innovation can displace more plural and deliberative forms of governance. When citizen input is subsumed under "solutionism", participatory projects risk reinforcing rather than questioning the technocratic assumptions of smart urbanism.

2.3 When Participation Breaches the Frame

A particularly thorny challenge arises when participatory processes surface issues that exceed the project's original scope. These may include concerns about surveillance, algorithmic bias, environmental justice, or historical grievances; issues that are difficult to resolve within the narrow constraints of a design or pilot project. As Van Twist et al. [26] observes, these moments can serve as instances of "civic disclosure", where latent tensions emerge, and dominant narratives are contested.

However, such disclosures are often managed through mechanisms of containment. Project teams or institutional stakeholders may invoke procedural closure, arguing that concerns have already been addressed or that new questions fall outside the scope of the project [16, 29]. Van Zoonen [27] documents how prior consultations are sometimes used as shields against renewed scrutiny, especially when ethical or political challenges are raised. These rhetorical strategies effectively signal that the time for deliberation has passed, positioning dissent as disruptive rather than constructive.

Moreover, the pursuit of consensus, often framed as a participatory ideal, can itself be a mechanism of silencing. Building consensus can flatten disagreement, marginalise minority perspectives, and suppress uncomfortable but necessary questions [12, 15]. In smart city contexts, this may result in pressure to remain “on topic”, avoid conflict, or focus only on implementable outcomes, at the expense of equity, inclusion, and accountability.

2.4 Participation as Situated Learning

In response to these limitations, a growing number of cases point toward a different model of participation, one that emphasises reflection, mutual learning, and institutional transformation. Rather than treating citizen participation as a one-off consultation or a ladder to climb, these approaches frame participation as an ongoing, adaptive process. They are rooted in traditions of deliberative democracy, science and technology studies, and design research that foreground complexity, ambiguity, and negotiated meaning [4, 5, 20].

A key insight from this body of work is that learning occurs not only among citizens but also within institutions [1, 8, 23, 25]. Participation becomes a way for municipal professionals, designers, and policy actors to reflect on their own assumptions, roles, and constraints. For example, TRANSFORM City Labs created environments where citizens and decision-makers could iteratively explore challenges and solutions, not as fixed endpoints, but as shared learning trajectories [18].

In smart city innovation, such learning-based approaches allow for more open-ended engagements with questions of value, purpose, and equity. The Sharing Cities initiative and related participatory design processes, as described by Crabu and Magaouda [6], exemplify this change: collaborative prototyping is not only about technical testing, but also about constructing shared meaning around what “smart” should entail. Similarly, Hayes et al. [12] and Matos-Castaño et al. [17] show how participatory processes that prioritise dialogue and reflection can challenge institutional path dependencies and produce socially embedded innovation.

In the Netherlands, Ricardo et al. [22] and Salinas et al. [23] document cases where public sector professionals learnt to reframe their roles not as extractors of citizen input, but as participants in processes of uncertainty, negotiation and co-creation. These cases demonstrate that when participation is embedded in learning-rich formats, it can not only alter project outcomes but also influence governance cultures and institutional responsiveness. Importantly, this learning is not limited to interpersonal or cognitive aspects. It is institutional. It involves changes in routines, evaluation frameworks, and organisational mindsets. As Ozkaramanli et al. [19] argue, participation should not be seen as a tool to manage publics,

but rather as a method to open up spaces for political, ethical, and epistemic inquiry.

2.5 Laddering and Learning?

The participation ladder has been a foundational metaphor in understanding and organising citizen engagement, but it is increasingly problematic for the complex, politically charged realities of smart city development [4, 5]. Its linear and hierarchical framework tends to obscure the relational, iterative, and contextual dynamics that define meaningful participation in practice. As this review has shown, ladder-based models face significant constraints: institutional rigidities, project-driven timelines, depoliticising tendencies, and a persistent emphasis on consensus and closure.

However, alongside these limitations, there is growing evidence for learning-based approaches that reconceive participation as a space of mutual reflection, institutional change, and situated experimentation. These approaches better reflect the uncertain, contested, and value-laden terrain of smart city innovation. They move us away from technocratic metrics of “influence” and toward a deeper engagement with how participation reshapes roles, assumptions, and capacities over time.

Although Collins and Ison [5] call for “jumping off the ladder”, municipalities have strongly adopted ladder-based operationalisations, so perhaps there is a way to combine ladder-based and learning-based approaches. Consequently, the question we explore in this article is:

What are the current constraints and challenges of ladder-based models of participation in smart city participatory R&D, and how might learning-oriented approaches offer a complementary perspective?

We dive into this question by conducting a case study of the participatory R&D process behind the “Scan Bike”, a project with a predefined project scope that not only involved citizens in shaping urban technology, but also challenged the professional, institutional and political boundaries of what counts as participation in the smart city.

3 Participatory R&D Project Context and Research Approach

The description of the context and the characteristics of the participatory R&D project in this section shows, among other things, how carefully and collaboratively it was prepared. Our role in the preparation and as a partner in the multi-stakeholder group collaborating in this project provided the opportunity to be closely involved as action and design researchers. In turn, this enabled us to pursue the research question through intensive data collection and analysis, informed by firsthand observations of the interactions and dynamics within the project.

3.1 Collaborating on Responsible Scanning and Recognition

Like many other cities, Amsterdam is committed to maintaining a clean, safe and liveable environment. To achieve these objectives, the municipality deploys a diverse range of civil servants across multiple departments and utilises various technologies. For example,

to address parking congestion, the city uses a parking enforcement vehicle equipped with object recognition technology to identify vehicle licence plates that occupy parking spaces without payment. One of the key conditions Amsterdam has set when introducing such technologies in public space is to ensure their responsible use³.

In 2022, the Department of Digitisation, Innovation & Information initiated a procurement process for a new camera vehicle capable of recognising various objects for internal municipal clients. The objective was to more fully integrate the city's ethical values by rethinking its approach to procuring and designing smart city technologies. Specifically, the Computer Vision Team (CVT) developed a tender based on two guiding principles. First, to improve data control, the municipality developed its own machine learning models for object recognition and data obfuscation (e.g., blurring people in images). Second, following the award of the tender, a multi-stakeholder research and development (R&D) trajectory (including a citizen panel) was planned as a core component to ensure that the service would be responsibly designed and implemented [7].⁴

During the procurement process, the CVT engaged several academic partners to embed public values from the outset. The Responsible Sensing Lab⁵ – a collaboration between the City of Amsterdam and the Amsterdam Institute for Advanced Metropolitan Solutions – was closely involved. The lab worked in partnership with the Knowledge & Intelligence Design⁶ section at Delft University of Technology and the Civic AI Research Lab⁷ at the University of Amsterdam. The research project itself was led by the Civic Interaction Design⁸ research group at the Amsterdam University of Applied Sciences.

In January 2023, the CVT began developing a participation plan, modelled on the City of Amsterdam's step-by-step guide for participatory projects.⁹ The draft plan was refined through several rounds of feedback from the Civic AI Lab and the Civic Interaction Design group. The final version of the participation plan¹⁰ was approved by the responsible alderman in December 2023. In parallel, a public survey was conducted to assess the perspectives of residents on the use of object recognition technologies in the city and to recruit participants for the citizen panel.¹¹ A total of 862 residents completed the survey, of whom 186 expressed interest in joining the R&D project. The respondents also shared their views on the municipality's use of camera-equipped vehicles for inspecting public spaces.

The 186 interested respondents were subsequently contacted to provide additional demographic and motivational information, including age, gender, district of residence, and reasons for their interest in participating. Ultimately, 48 individuals registered for the R&D project. From this group, 14 participants were selected while ensuring a diverse representation of views, ranging from positive to

neutral to critical, as well as variation in city district representation. All selected participants were aged 30 years or older.

In late 2023, the tender was awarded to a company that specialised in bicycle-mounted camera systems. As a result, the city named the new service the "Scan Bike." The project was formally titled Collaborating on Responsible Scanning and Recognition for a Liveable, Clean and Safe City. The R&D project drew on principles from Design Thinking and Agile Software Development, resulting in a structured process involving design sessions, project team sprints and regular demonstration sessions to evaluate results. A backlog was used to document requests, issues and proposed solutions at different stages. Collaboration with the citizen panel and academic partners commenced in February 2024 and ended in February 2025.

3.2 Data Collection and Analysis

The participatory R&D project consisted of 20 sessions, including design workshops, demonstration events, evaluation moments, and explanatory meetings (Figure 1). Most of these sessions were conducted in person, with some held in a hybrid format. Each session generated concrete output, such as presentation slides, annotated flip charts, Miro boards, and monthly newsletters. As involved action and design researchers, we additionally produced field notes based on observations and reflections, covering both the multi-stakeholder sessions and the preparatory meetings. This comprehensive data set enabled a grounded analysis of how the project's realisation aligned with the objectives outlined in the participation plan and how it compared with patterns and concerns identified in the relevant academic literature.



Figure 1: The participatory R&D project comprised 20 sessions, primarily involving the citizen panel, the CVT, and the academic partners. Municipal partners and the scan bike developer occasionally joined. While most sessions were held in person, the demo sessions took place in a hybrid format.

To reflect on the research question in light of the related work, we needed to evaluate the participation objectives by comparing them with the actual realisation of participation. This analysis required the following steps.

³<https://www.amsterdam.nl/innovatie/agenda-digitale-stad/>

⁴<https://s2c.mercell.com/today/34506>

⁵<https://responsiblesensinglab.org>

⁶<https://www.tudelft.nl/io/over-io/afdelingen/sustainable-design-engineering/kind>

⁷<https://www.civic-ai.nl>

⁸<https://civicinteractiondesign.com/>

⁹<https://p.amsterdam.nl/stappenplan/inleiding>

¹⁰<https://open.amsterdam/woo-zoeken/detail/ad4a4184-c113-44b2-8f3d-32a4dbe1ad44>

¹¹<https://onderzoek.amsterdam.nl/publicatie/enquete-cameras-openbare-ruimte>

- (a) *Summary of the participation plan:* We began by reviewing the participation plan and its underlying guidelines. We extracted and summarised the plan's core objectives, categorising them into distinct focus areas. For each focus area, we documented the intended participation outcomes and levels of influence.
- (b) *Identification of key developments:* We then identified and described the key developments along which the project was organised. We distinguished between a preparatory phase, subsequent thematic developments and an ongoing evaluation, mapping each development to its corresponding focus area(s) based on their stated aims and objectives.
- (c) *Reconstruction of key developments:* We analysed the realisation of the participatory R&D process along these key developments in three iterative rounds using MaxQDA, a qualitative analysis software tool. In an initial exploratory round, we organised all available data relevant to each key development into corresponding folders. In a second round, we applied a participatory lens and a learning lens to identify data fragments that could serve as meaningful building blocks for a narrative reconstruction. In the third and final round, three researchers collaboratively developed a detailed chronological account of each development, drawing on these curated fragments to trace the participatory dynamics over time.
- (d) *Evaluation of key developments:* We conducted a collaborative interpretative comparison between the intended and realised forms of participation. For each key development, we assessed how the observed participatory dynamics related to the planned participation outcomes and levels of influence. We also documented learning moments that emerged throughout the process to enable reflection in the subsequent step.
- (e) *Reflection:* Finally, we reflected on the evaluation results in relation to the research question. This reflection was conducted in two stages: first, by connecting the findings to documented challenges in the existing literature; second, by applying a learning-oriented lens to assess broader implications. Both reflections were developed through ongoing discussions among the authors.

We present the results of step a in Section 4, step b–d in Section 5 and step e in Section 6.

4 The Participation Plan for the 'Scan Bike'

This section describes the participation plan (see Table 1 for an overview), which will be compared with its realisation in Section 5.

4.1 Focus Areas and Participation Ladder: Outcomes and Levels of Influence

The participation plan outlines how the City of Amsterdam can independently develop various measures to respect the fundamental rights and wishes of its citizens.¹² Although the municipality is committed to this goal, it acknowledges that it can never fully capture all the wishes and demands of its residents. To better align the

image recognition system with citizen values, a multi-stakeholder group will collaborate on an R&D project aimed at "professionalising" the image recognition system (p. 5). The main objective of this collaboration is to ensure that the deployment of the image recognition system better respects the fundamental rights and interests of citizens. Ultimately, this initiative seeks to provide Amsterdam residents with greater insight into how the municipality uses technology.

The participation plan outlines three focus areas for Amsterdam residents to engage in:

- Service Improvement (Focus Area 1): "How the image recognition system should be deployed, including the collection and anonymisation of data from public spaces, and what steps should be taken to improve it. The case that will be used for this purpose is the recognition of construction waste containers on vulnerable quay walls."
- New Use Cases (Focus Area 2): "Whether other objects or situations, in addition to recognising construction waste containers, would be valuable for Amsterdam residents to identify in public spaces, and ensuring that the municipality actively addresses these."
- Evaluation of the Collaboration (Focus Area 3): "Actively evaluating how the collaboration with other parties is going, identifying improvement areas, and reflecting on the lessons learnt from this cooperation."¹³

The topics included in the planned participation process cover how Amsterdam residents perceive scanning vehicles and public space surveillance, their awareness and preferences for image recognition technology, and their expectations for transparency, anonymisation and fairness. They also address communication strategies, potential citizen access to collected data, and mechanisms for objection and accountability.

In the plan, the municipality excludes other topics such as the necessity and permissibility of scanning public space, developing image recognition algorithms, and processing data in Microsoft Azure, which have been sufficiently examined through external advice and prior decisions. It views further discussion on these topics as a distraction from the primary goal of the participation process: improving the image recognition system.

According to the participation policy guidelines titled Participation Outcomes and Levels of Influence,¹⁴ the participation plan begins by outlining the intended participation outcomes, followed by an explanation of the levels of influence within the participation process.

Based on Figure 2, the levels of influence (1, 2, 3, and 4) and the participation outcomes (A, B, and D) covered in the participation plan are summarised in the next sections. The outcome 'Ownership' (C) was not part of the plan.

¹²<https://open.amsterdam/woo-zoeken/detail/ad4a4184-c113-44b2-8f3d-32a4dbe1ad44>

¹³<https://open.amsterdam/woo-zoeken/detail/ad4a4184-c113-44b2-8f3d-32a4dbe1ad44>, p. 5

¹⁴<https://p.amsterdam.nl/stappenplan/uploads/attachments/clysv3ny300sj01plwvhimbj4-participatiedoelen-en-mate-van-invloed-1.pdf>



Figure 2: The participation ladder from Amsterdam’s participation policy guidelines, illustrating four ascending levels of citizen influence (1. Responding, 2. Advising, 3. Collaborating, 4. Co-deciding) and their corresponding participation outcomes (A. Interests in focus, B. Quality, C. Ownership, D. Voice). The diagram illustrates how higher levels of participation yield progressively more substantive outcomes, built upon foundational layers of informing and listening, as well as awareness. The visual structure demonstrates the relationship between the degree of citizen influence and the nature of participation outcomes achieved.

4.2 Focus Area 1: Improvement of the Service

In the participation plan, Service Improvement (Focus Area 1) encompasses two participation outcomes and four levels of influence (see Figure 2).

Quality (Outcome B) is summarised as “Allowing knowledge, expertise, and experience (collective wisdom) to be contributed, improving the content and quality of the project or policy” (p. 6). The R&D project is regarded as an opportunity where “something tangible can be done with input from the collaborating parties” (p. 7) to improve the scan bike service for the current use case.

A prerequisite for this outcome, as described in the plan, is Interests in Focus (Outcome A), summarised as “Exploring and investigating perspectives, interests, and needs on both sides regarding the task at hand, fostering understanding of each other’s viewpoints and establishing legitimacy for the choices made” (p. 6). This outcome is further elaborated as the CVT’s aim “to develop a deeper understanding of the wishes and interests of residents” (p. 6).

The processes underneath these outcomes are on four levels of influence. Advising (Level 2) is summarised as “Amsterdam residents advise the municipality and share useful ideas or suggestions” (p. 9). Their opinions, for example, whether images are sufficiently anonymised, will be discussed with all involved parties.

Collaborating (Level 3) – also called co-creation in the plan – is summarised as “Amsterdam residents and the municipality work together as equal partners on the policy or project” (pp. 8–9). This

level is described as a multi-stakeholder collaboration in which “problems, wishes, requirements, solutions, and measures are jointly defined” (p. 9).

Co-deciding (Level 4) is summarised as “Amsterdam residents decide on a policy or a project within the framework. Equal partners” (p. 10). This level is described as having an equal vote in determining which insights and solutions are most important and should be prioritised.

Finally, Responding (Level 1) is summarised as: “Amsterdam residents give an opinion or reaction to a proposal of the municipality” (p. 10). The plan states that a broader group of Amsterdam residents beyond the citizen panel would potentially be involved in responding to proposals.

4.3 Focus Area 2: New Use Cases

New Use Cases (Focus Area 2) is described in the participation plan as an interplay between a participation outcome and a level of influence (see Figure 2).

Voice (Outcome D) is described as “Promoting the democratic process; Amsterdam residents can have a say in decisions about their living environment” (p. 7). The plan mainly concerns the citizen panel’s potential ideas about detecting additional or different objects or situations. To make participation meaningful, the municipality outlines its intention to implement these ideas, provided that there is sufficient alignment with the municipality’s objectives and responsibilities. If these ideas do “not align with current municipal policy or ambitions, further discussions will be held with the designated director or department head” (p. 8).

This Voice, related to New Use Cases, manifests itself through Co-deciding (Level 4), which is introduced as “Amsterdam residents decide on policy or project within the framework. Equal partners” (p. 10). Just as with Co-deciding related to Service Improvement (Focus Area 1), “the involved Amsterdam residents will have the same opportunity to contribute ideas and an equal ‘vote’ in determining which matters are most important and should be prioritised” (p. 10). Strong preferences for new or alternative applications are said to be “brought to the attention of the responsible administrator to realise them” (p. 8).

4.4 Focus Area 3: Evaluating the Collaboration

Evaluation of the Collaboration (Focus Area 3) related to New Use Cases and Service Improvement was not included in the description of participation outcomes, levels of influence, or other aspects of the participation plan. However, three evaluation sessions were interwoven into the series of other sessions in the actual R&D project.

5 Participation: Realisation and Evaluation

In the following subsections, each key development is briefly described and evaluated against the planned ladder-based approach, with an eye on learning moments for the CVT. Section 5.7 concludes with an overall assessment of the findings through a participation-ladder lens, based on the summary of the key developments presented in Table 2.

Table 1: Summary of the Participation Plan’s Focus Areas, Intended Outcomes, and Levels of Influence.

Focus Area	Intended Outcomes	Intended Levels of Influence
1. Service improvement	<i>A. Interests in Focus:</i> Exploring and investigating perspectives, interests, and needs on both sides; fostering understanding and establishing legitimacy for choices. <i>B. Quality:</i> Allowing knowledge, expertise, and experience to be contributed, improving content and quality of the project.	<i>1. Responding:</i> Citizens give opinions or reactions to municipal proposals (broader group beyond panel). <i>2. Advising:</i> Citizens advise the municipality and share useful ideas or suggestions. <i>3. Collaborating:</i> Citizens and municipality work together as equal partners; problems, wishes, requirements, solutions jointly defined. <i>4. Co-deciding:</i> Citizens have equal vote in determining which insights and solutions are most important and should be prioritised.
2. New use cases	<i>D. Voice:</i> Promoting the democratic process; citizens can have a say in decisions about their living environment. Ideas to be implemented, provided they align with municipal objectives and responsibilities.	<i>4. Co-deciding:</i> Citizens have equal opportunity to contribute ideas and equal vote in determining priorities. Strong preferences brought to the responsible administrator’s attention.
3. Evaluation of the collaboration	Not described in terms of participation outcomes in the plan.	Not described in terms of levels of influence in the plan. Three evaluation sessions were interwoven into the R&D project.

5.1 Key Development 1: Identifying Themes to Work On



Figure 3: One of the collaborative collages that responded to the question of what participants considered important for the digital city of the future. Participants worked with images from magazines and with value cards (such as “Efficiency”, “Fairness” and “Freedom”) generated from municipal policy documents.

5.1.1 Description. During the launch of the project and the subsequent first design session, participating citizens, civil servants, and researchers explored what they found important for Amsterdam as a digital city. They created collages (see Figure 3) with value cards and images, discussed them in groups, and distilled their insights

into a collective mind map. A second exercise used four steps in the operational process of the scan bike, from encountering it on the street to public enforcement following up, to identify key concerns in each. The participants placed emojis on flipcharts with these steps and explained their reactions by identifying key issues and preliminary solutions, which were collected on four other flipcharts. Dot voting¹⁵ helped refine these into four themes: data minimisation, transparency, control over technology, and human dimension. This key development established the initial collaborative basis and agenda for the R&D process and directly shaped the topics addressed in the following key developments.

5.1.2 Evaluation. Although still early in the R&D project, this key development shows that higher levels of influence were present, as described in the participation plan (Section 4). The design session was creative and collaborative, and the dot voting, for example, illustrates a co-decisive process. Furthermore, the reactions to the steps in the operational process clearly functioned as advice.

Similarly, this key development also contributed to the expected outcomes of participation. The panel’s interests became clear, contributing to the outcome Interests in Focus (Outcome A), and the first ideas were collected to improve the quality of the scan bike service (Outcome B). Especially in the focus area of New Use Cases, the goal was to enable a strong citizen voice in developments affecting their living environment (Outcome D). The citizen panel’s input acknowledged the need for this goal. Their discussions even extended beyond new use cases of object recognition to more fundamental concerns, such as influencing partially automated decisions and preventing data linkage across databases.

For the first time, the CVT became aware that concerns had arisen that exceeded the original scope of the participation plan,

¹⁵<https://designthinking-methods.de/en/3Ideenfindung/dotmocracy.html>

indicating broader issues surrounding future public space technologies. These concerns were particularly related to control over technology and the human dimension, both of which resulted in key developments that will be revisited in the following sections. First, we will cover key developments in data minimisation and transparency, both of which aim to improve the service, as described in Section 4.2.

5.2 Key Development 2: Implementing Data Minimisation



Figure 4: One of the four flip charts from the first design session illustrates how the theme of data minimisation, later developed as key development 2, was identified. Participants used emojis to react to details of the operational process in which containers and people were recognised in the collected images and subsequently blurred or removed. From these reactions, wishes (yellow), concerns (blue), and solutions (green) were gathered and discussed. In the final step, dot voting revealed data minimisation as the most important concern.

5.2.1 Description. Data minimisation was the first theme to be further developed (see Figure 4). In advance of the second design session, the project team studied citizens’ concerns about data over-collection and misuse in various operational steps of the scan bike.

In the session itself, mixed groups of citizens, CVT members, researchers, and the scan bike developer reflected on their feelings and values about the data. Using images and value cards, they discussed and articulated concerns such as privacy, justice, and sustainability. After discussing how to minimise data in various operational steps, the participants conceived solutions using the Crazy 8s method¹⁶ and pitched their ideas. Based on these pitches, concrete concepts were developed in groups that were then prioritised.

The CVT used these results to define four potential data minimisation scenarios, from blurring only personal data on the images (Scenario A) to sharing only GPS data (Scenario D) of the recognised construction waste container. After real-life testing, Scenario A remained the default, but the CVT committed to using Scenario D as a starting point for future negotiations with internal clients. In addition, a request from the Department of Monitoring and Enforcement in Public Space to expand the number of images of construction waste containers was denied to honour the priorities of the citizen panel.

5.2.2 Evaluation. In the early phases of developing data minimisation, the project enabled collaborative and co-decisive participation, as intended, related to Service Improvement (Focus Area 1) in the participation plan (Section 4.2). The design session included joint exploration of concepts, iterative refinement, and prioritisation through dot voting. Ethical concerns were translated into four scenarios, such as the principle of collecting only strictly necessary data. This process involved both the citizen panel and municipal staff in reflective design work, marking a meaningful form of collaboration that supported quality improvement (Outcome B) and helped the CVT become aware of the panel’s interests (Outcome A), both intended outcomes of the Service Improvement focus area.

However, during later implementation stages, the influence of enforcement officers from the Department of Monitoring and Enforcement in Public Space started to grow. Their prioritisation of efficiency and operational feasibility led the CVT to adopt the most data-intensive solution, despite citizen preferences for the opposite. This decision introduced a tension: Although the early stages reflected higher participation levels, the eventual decision resembled a more advisory model.

Interestingly, the CVT demonstrated genuine engagement with several learning outcomes. The denial of the request for more images illustrates this. Furthermore, retaining the least data-intensive solution (scenario D) as a default option for future use cases across other departments demonstrates that the CVT intends to give the citizen panel’s priorities influence beyond the project’s temporal scope.

5.3 Key Development 3: Exploring Transparency

5.3.1 Description. This development aimed to design the physical scan bike in a way that makes its function legible and trustworthy in public space. During a demo session, a service blueprint was used to identify touchpoints for interaction and transparency. In a subsequent design workshop, citizens, CVT members, researchers,

¹⁶<https://designthinking-methods.de/en/3Ideenfindung/crazy-8.html>

and the scan bike developer explored their own design ideas, assessed them against selected values, and refined them based on peer feedback. They also discussed five design criteria – transparency, legibility, relatability, contestability, and actionability – and developed concepts for three prototypes: the scan bike as municipal infrastructure, as an enforcement tool, and as a point of contact (see Figure 5).

These were tested in three street locations with both spontaneous and invited participants, yielding six key insights. These ranged from the importance of visual cues when the bike is stationary, to how limited municipal communication fuels suspicion and false assumptions. Residents of Amsterdam provided concrete suggestions to improve the visibility and accessibility of the bike, especially online. Although some measures were adopted (e.g., a digital flyer and better website communication), more fundamental requests, such as clarifying the rationale behind use cases, remained unaddressed.

5.3.2 Evaluation. Initially, the design workshop demonstrated strong collaborative and co-decision-making processes, as intended in the participation plan for Service Improvement (Focus Area 1, cf. Section 4.2). However, follow-up discussions focused on individual responses and advice, rather than collective decision-making. The CVT decided to adopt lightweight information-provision strategies (e.g., website updates, business cards for the scan bike riders) without re-engaging the citizen panel in a co-decision-making way. This adoption was viewed as an experiment that could be improved based on the learnings gained beyond the project's temporal scope. The pressure to finalise outputs may have been influenced by the project's approaching end.

In summary, the participatory dynamics shifted from an initial influence at the top of the ladder to a more advisory role, as institutional feasibility determined what was ultimately taken forward. This narrowing helped maintain a focus on interests (Outcome A) and service quality (Outcome B), both of which are outcomes related to the Service Improvement focus area in the participation plan.

5.4 Key Development 4: Controlling Technology

5.4.1 Description. This development, related to the focus area of new use cases in the participation plan, responded to citizens' desire for more influence over the design and governance of smart city technology. Two central questions emerged: how to shape future object recognition use cases and how to influence municipal decision-making.

The first question was addressed in a demo session, where the citizen panel prioritised a predefined list of new use cases for object recognition and reflected on which personal characteristics should be prioritised for blurring in future services. Regarding the prioritisation of recognising new objects (see Figure 6), the CVT committed to taking the panel's priorities into account when implementing new scan bike applications. The first expansion of bike applications was the recognition of mobile toilets and scaffolding without permits for the Department of Monitoring & Enforcement in Public Space. This application was not among the top-priority items: waste (e.g., illegal dumping and litter), followed by rainwater



Figure 5: This image shows one of the three prototypes that was used during the street experiment while exploring transparency (KD3). The emphasis in the design of this prototype was on communicating its enforcement character. A second prototype emphasised its general function as a scan bike and a third on its affordances to interact with the bike rider. Image ©Michiel Landeweerd.

nuisance (e.g., clogged street drains), and defective traffic assets (e.g., a broken traffic light).

In relation to the second question, the CVT organised explanatory sessions on municipal decision-making and the role of advisory letters in it. For the request to expand the scan bike with the ability to recognise mobile toilets and scaffolding, the CVT decided to experiment with a citizen section in the advisory letter on this expansion. This letter, based on input from an 'ethical leaflet workshop'¹⁷ (see Figure 7) involving the citizen panel and CVT, was approved by the city's executive and forwarded to the council.

5.4.2 Evaluation. Activities related to New Use Cases (Focus Area 2) in the participation plan (Section 4.3) were expected to promote the voice of the citizen panel (Outcome D) through co-decision making (Level 4). However, the explicit intention in the plan to implement their ideas was not followed up on, and how their intended "equal vote" played out remained unclear. Although the process for new use cases gave citizens a co-decision-making role in shaping priorities, it also revealed the limitations of their influence, especially when the request for an expansion deviated from their priorities. This lack of follow-up reduces citizens' initial co-decisive role to an advisory one. This role contributes to the CVT having citizen interests in focus (Outcome A), which, in turn, enables the CVT to improve service quality (Outcome B).

On the other hand, the CVT committed to follow up on both priority lists (new use cases and blurring of characteristics) in the future, which illustrates the willingness to take the interests of the citizen panel seriously. Together with the effort to expand the advisory letter with a citizen section, this highlighted the opportunity for participants to contribute to both operational and strategic aspects of innovation.

¹⁷<https://openresearch.amsterdam/nl/page/109569/trainers-ethische-bijlsuiter>

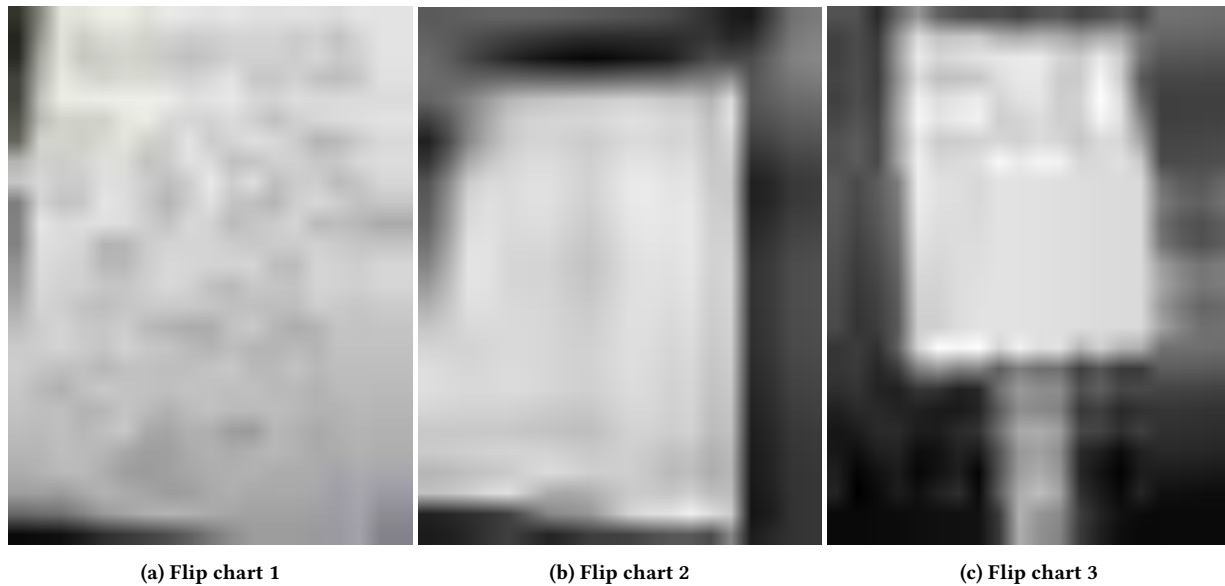


Figure 6: These flip charts a–c show how three individual members of the citizen panel prioritised a predefined list of potential objects for future recognition. The list was based on the pre-project survey (see Section 3.1) and existing nuisance reports. Among the items were “Uneven pavement”, “Temporary traffic signs left in place too long”, “Terraces without a permit” and “Assessing whether an area contains sufficient green space”. The individual priority lists were collected by the CVT, which committed to act on the collective results.

5.5 Key Development 5: Protecting the Human Dimension

5.5.1 Description. Throughout the project, fundamental concerns were raised regarding smart city developments (see, for example, Figure 7). These were most prominently voiced by the citizen panel in the advisory letter on the scan bike’s expansion. The letter outlined four key concerns: function creep, data accumulation, citizen disengagement, and asymmetry in municipal innovation investments. Although the CVT acknowledged these points in its response to the advisory letter, it reframed them as manageable within existing protocols and municipal decision-making structures, rather than as grounds for institutional change.

For example, one concern was the institutional bias toward enforcement over citizen service. The panel warned against prioritising the use of technology to detect and punish at the expense of support and service. They claimed that placing greater emphasis on improving the latter could reduce the need for some enforcement efforts. Rather than acknowledging this imbalance, the CVT’s response largely deflected the critique by emphasising that improving citizen services was the responsibility of the Department of Monitoring & Enforcement in Public Space. Although technically correct, this response illustrated the limits of institutional responsiveness and reinforced a technocratic orientation.

5.5.2 Evaluation. This key development was expected to promote the voice of the citizen panel (Outcome D) through co-decision making (Level 4), both of which are central to New Use Cases (Focus Area 2, cf. Section 4.3).

The key development introduced a more pronounced political and agonistic tone to the process. The concerns of the citizen panel intersected with debates on surveillance and civic responsibility. However, framing these concerns as external to the project’s technical goals limited their acceptance. This key development exemplifies how deeper values and longer-term risks are often surfaced but not structurally addressed in participatory innovation. Although citizens co-decided on the ethical content of the advisory letter, their influence remained mostly advisory.

However, the advisory letter created a precedent. The act of framing citizen perspectives for a political audience in the city council briefly connected administrative, executive, and democratic domains. Although no city council member chose to deliberate on the letter, its public visibility in the official council documents leaves open a future avenue for voice. In this way, it embodied a tension: the letter was structurally advisory, yet temporally open-ended: participation today may still yield political impact tomorrow.

5.6 Key Development 6: Assessing the Collaboration

5.6.1 Description. The sixth development focused on evaluating the overall collaboration. This evaluation was done through an opening session on expectations, a midterm evaluation, and a final reflective dialogue (see Figure 8). During the opening session, citizens raised questions about decision-making processes, complaint procedures, and the handling of disagreements. The midterm evaluation focused on identifying which practices to continue, add, or eliminate. The participants praised the creativity and openness of

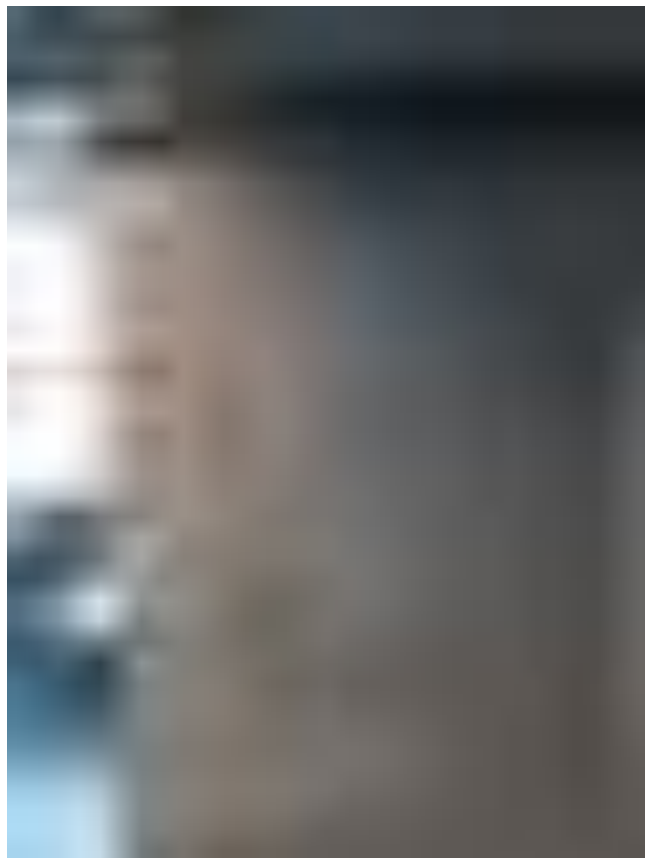


Figure 7: One of the flip charts created during an 'ethical leaflet workshop' on extending the scan bike service with the capability to recognise unpermitted mobile toilets and scaffolding. The chart captures a set of risks identified by the citizen panel, including "social cooling", "function creep", "loss of control", and "data hunger". Several of these concerns later reappeared in the advisory letter to the city council discussed in Key Development 4: Controlling Technology.

the sessions, as well as the presence of diverse stakeholders. Suggestions included more low-tech testing, earlier participation in the process, and greater transparency about decision-making authority. The participants also called for more attention to diversity and collaboration with critical civic organisations.

The final evaluation revealed tensions between the formal scope of the project and the participants' expectations. Many felt the process was too late-stage to allow for real collaboration and co-decisions. Although the participation plan was clear, it had not been co-designed, and some citizens felt it steered them into a consulting role. Although trust developed between the citizen panel and individual CVT members, concerns remained about the broader institution's commitment to ethics and transparency.

Reflections included calls to clarify from the outset whether citizens were involved as advisors or co-decision-makers. Others warned that when citizens become too embedded, they risk losing their critical stance. However, many appreciated the opportunity

and believed that their presence had made a difference, even if indirectly. This final key development underscored that meaningful participation requires sustained attention not only to content but also to clarity of process, timing, and institutional receptivity.

5.6.2 Evaluation. Although Evaluating the Collaboration (Focus Area 3) was not described in terms of participatory objectives (see Section 4.4), it demonstrated strong collaboration (Level 3) and mutual understanding of interests (Outcome A). The evaluation workshops were candid and respectful, and the citizens directly contributed to the development of participation principles and practical recommendations. These contributions led to internal reflections within the CVT and intended adjustments to future participatory planning. The participants appreciated the openness of the CVT and noted a climate of trust.

However, this trust sometimes came at the cost of critical distance. Some panel members felt they had become overly loyal to the CVT's framing and goals, acting more as consultants than collaborators or co-deciders. Others expressed a desire to influence upstream decisions: shaping the participation format, defining the problem, and engaging with broader ethical questions. These desires were not met. Instead, the project remained constrained to the original scope of the R&D project, which supported collaborative improvement but not institutional transformation.

5.7 Overall Evaluation of the Results

Three patterns emerge from the evaluation of the six key developments, which are summarised in Table 2.

Several key developments (particularly 2, 3, and 4) show how participation travelled through different rungs of the municipal participation ladder over time. The early phases featured moments of strong collaboration and even co-decision, with equal votes in identifying themes, developing solutions, and prioritising outputs. These collectively prioritised outcomes effectively narrowed the decision space of the CVT, while the department retained the final authority to make the decision. Consequently, participation oscillated between co-decisive, collaborative, and advisory modes (i.e., between levels 4, 3, and 2).

However, the advisory level of influence was not necessarily the endpoint, as a second pattern concerns how the implementation of the learnings in key developments 2, 4 and 5 was postponed beyond the project's temporal frame. Throughout the R&D project, the CVT committed to continuing several citizen priorities, such as archiving the least data-intensive scenario as a future baseline and incorporating citizen perspectives into future advisory letters. These commitments imply that participatory influence can potentially extend beyond the immediate project cycle.

In this project, focused on the design of the scan bike and its data processing, participation proved to be inherently political. In several key developments (particularly 1, 5, and 6), citizens raised fundamental concerns that reached beyond the project's predefined thematic scope. The advisory letter, for instance, raised questions about function creep and citizen disengagement, while the final evaluation called for greater influence on upstream decisions regarding problem definition and ethical challenges.



Figure 8: During the final evaluation, several themes were discussed, including “Trust”, “Collaboration”, “Expectations”, “Ethics”, “Understandability”, “Engagement” and “Responsible innovation?”. This flip chart presents core statements when discussing “Trust”. The citizen panel felt “taken seriously” which contributed to “trust in the CVT members”. Although this was seen as “a start”, the “concerns [were] still there”, as the municipality was still perceived as “naive” regarding the use of technology that, for example, “must first recognise faces” in order to blur them.

Together, these three patterns illustrate how participatory ambition interacts with institutional boundaries and political contestation. The following section returns to the implications of these observations in light of the research question.

6 Discussion and Conclusions

Our evaluation reveals a common pattern: early co-decisive processes narrowed over time into more advisory forms of influence (see Figure 9). However, influence may still be exercised indirectly through responsible professionalisation of the scan bike and the potential political uptake of deeper concerns. These findings return us to the central question: What are the current challenges and constraints of ladder-based participation in smart city R&D, and how might learning-oriented approaches offer a complementary perspective?



Figure 9: An illustration of how levels of influence change over time. In this typical case, at time T1, citizens collaborate (e.g., through a co-design workshop). At T2, they’ve moved up to co-deciding, e.g. dot-voting to prioritise the results at T1. Finally, at T3, they’ve descended to advising, because their priorities at T2 play a secondary role in the decisions by the CVT in interaction with the Department of Monitoring and Enforcement in Public Space.

Returning to the related work discussed in Section 2, we first demonstrate how the observed challenges align with documented difficulties in achieving influence at the higher levels of participation. Additionally, these patterns align with the broader institutional and political dynamics characteristic of smart city innovation. In what follows, we argue that the temporal dynamics of influence and institutional uptake observed in this case point to significant opportunities for collaborative and institutional learning in ladder-based participatory innovation projects.

6.1 Acknowledging the Challenges Higher Up the Ladder

The evaluation results align with critical literature on participatory governance in smart cities, particularly the challenge of sustaining citizen influence in co-decision-making roles over time. As Van Twist et al. [26] notes, participation often operates within bounded institutional expectations, which gradually reassert themselves as projects transition from ideation to implementation. This was evident in the scan bike project: While the early stages enabled meaningful co-creation and ethical exploration, later phases saw a shift towards more technocratic and efficiency-driven priorities. The inclusion of operational experts, particularly from enforcement departments, played a decisive role in shaping outcomes, echoing Van Twist et al. [26]’s observation that expert authority can subtly crowd out more exploratory or dissenting perspectives.

A similar dynamic played out in the citizen panel’s advisory letter, where the effort to reach a unified message constrained the articulation of divergent viewpoints. Although the advisory process included disagreement and doubt, the institutional logic of formal decision-making encouraged consensus. This observation is consistent with the claim by Van Zoonen [27] that consensus-seeking, although framed as a participatory virtue, can function as a discursive closure mechanism. Once a participatory message is formalised, it becomes easier for institutions to invoke it as evidence of responsiveness, even if underlying concerns remain unaddressed. The presence of conflicting discourses between collaborative openness and procedural closure was also marked linguistically. Phrases

Table 2: Summary of participation realisation across six key developments. Early stages often achieved collaborative and co-decisive participation as planned, but implementation phases shifted toward advisory influence due to institutional constraints, operational priorities, and temporal pressures. The CVT demonstrated learning through commitments to apply citizen priorities in future use cases and experiments with novel governance formats.

KD	Key Development	Realized Participation	Comparison to Initial Aims
1	Identifying Themes to Work On	Collaborative and co-decisive (dot voting, collective mapping). Reactions to operational steps functioned as advice.	Aligned with plan. Contributed to interests in focus and quality improvement outcomes. Concerns exceeded original thematic scope, pointing to broader smart city issues.
2	Implementing Data Minimisation	Early: collaborative and co-decisive (joint exploration, iterative refinement, prioritisation). Later: advisory (CVT adopted most data-intensive solution despite citizen preferences).	Early phases aligned with plan. Implementation became advisory due to enforcement officers' efficiency priorities. CVT learning shown through denying request for more images and committing to least data-intensive scenario for future.
3	Exploring Transparency	Initially: collaborative and co-decisive (three design iterations). Follow-up: advisory (lightweight strategies adopted without re-engaging panel).	Shifted from high-ladder influence to advisory role as institutional feasibility determined outcomes. Approaching project end influenced dynamics. Maintained focus on interests and service quality.
4	Controlling Technology	Co-decisive in shaping priorities. Advisory in implementation (first expansion deviated from priorities). Novel format: citizen section in advisory letter.	Expected voice through co-decision-making, but implementation intention unclear. Initial co-decisive role rendered advisory. CVT commitment to follow priority lists in future shows temporal extension beyond project.
5	Protecting the Human Dimension	Mostly advisory. Citizens raised broader ethical issues (function creep, data accumulation, disengagement, innovation asymmetry). CVT reframed as manageable within existing protocols.	Structurally advisory despite political tone. Deeper values surfaced, but not structurally addressed. Advisory letter created precedent connecting administrative, executive, and democratic domains – potential for future political impact.
6	Assessing the Collaboration	Strong collaboration. Candid evaluation workshops with direct contributions to participation principles and practical recommendations. Led to internal CVT reflections and future planning adjustments.	Trust sometimes reduced critical distance – panel members felt like consultants rather than co-decision-makers. Desire to influence upstream decisions unmet. R&D framing supported collaborative improvement, not institutional transformation.

such as “we have listened and will act on it” illustrate a shift toward institutional reassurance, which, as Van Zoonen [27] argues, serves to neutralise contestation by reframing critical input as advice rather than challenge. Despite the project's self-positioning as a co-creative R&D trajectory, it remained structurally constrained by procedural and service-improvement logics, particularly in its final stages. This tension raises a broader institutional question: why frame participation in terms of ownership or co-decision if the project's governance structures cannot sustain such influence? As Ricardo et al. [21] argues, the gap between participatory promise and institutional capacity can erode trust, especially when participants experience influence as symbolic rather than substantive. Although shifting influence over time is not inherently problematic, it requires transparency and careful management of expectations. In the scan bike project, initial openness may have unintentionally created expectations that later stages could not meet.

Despite this, the project yielded a wide range of insights on surveillance, legitimacy, and service framing that were neither dismissed nor fully carried forward. This observation underscores the limitations of relying solely on influence-based models such as the participation ladder. As Collins and Ison [5] suggest, a learning-based perspective better captures how participatory processes can

generate institutional reflexivity, even when direct influence is limited. In this light, the scan bike case is less a failure of co-decision-making than a missed opportunity to institutionalise learning. It can be seen as a site where valuable knowledge was generated, but not systematically mobilised.

6.2 Complementing the Ladder with a Learning Approach

The scan bike case illustrates both the potential and the limits of participatory R&D within municipal innovation, particularly after the institutional decision to professionalise the scan bike as a multi-purpose service. Although the early phases offered genuine opportunities for collaboration and reflection, structural and procedural constraints ultimately shaped the extent of citizen influence. These constraints were not only organisational; they were also temporal, discursive, and epistemic.

The first implication concerns the alignment between participatory ambition and institutional follow-up. Although early documents invoked high levels of influence, such as co-decision making and shared ownership, these were not carried through into implementation. Ricardo et al. [21] highlights the need for greater realism

in participatory framing: when deep influence is not institutionally feasible, setting clear boundaries and managing expectations becomes essential for ensuring trust and integrity.

Second, the project underscores the importance of institutional responsiveness to ethical and political concerns. Participants raised questions about surveillance, legitimacy, and the human dimension of enforcement, but the city often reframed these as impractical or outside of the project's scope. This response reflects a familiar pattern in smart city innovation, where complexity is often reduced in the interest of administrative manageability (Van Twist et al. [26], Van Zoonen [27]). However, as Ozkaramanli et al. [19] argue, participation should be understood not merely as a means to collect preferences, but as a generative space for political, ethical, and epistemic inquiry – particularly when technologies reshape foundational citizen-state relations.

Third, the case illustrates the importance of actively negotiating the balance between expert and lay knowledge. In the later stages, the project was steered by experts whose priorities, such as operational efficiency, shaped the final decisions. Although these contributions were practically grounded, they shifted the balance away from the values raised earlier by citizens. A more robust process would make such epistemic tensions explicit and subject to reflection, rather than allowing one knowledge regime to silently displace another [12, 26].

Fourth, this case supports a shift in perspective from participation as influence to participation as a means of institutional learning. Participatory processes, particularly when embedded in iterative and exploratory formats, can generate institutional reflection even if the immediate outcomes are modest. For example, the Sharing Cities initiative and related collaborative prototyping efforts illustrate how co-design can facilitate shifts in how “smartness” is socially constructed Crabu and Magaouda [6]. Similarly, in the scan bike project, the CVT began to internalise more reflexive practices, reconsidering assumptions and participatory roles. These shifts align with Salinas et al. [23] and Matos-Castaño et al. [17], which demonstrate that institutional actors can learn to adopt roles as co-learners rather than gatekeepers, particularly when faced with uncertainty or disagreement.

Moreover, as Rattay et al. [20] argue, institutional learning in design work depends on critically engaging with the imaginaries that shape participation from the outset. These imaginaries pre-determine what kind of futures are seen as desirable and who is imagined to benefit from them. In the scan bike case, certain imaginaries driven by values such as efficiency, cleanliness, and safety were institutionally dominant. In contrast, more critical values, around care, rights, and resistance, were surfaced but less integrated. Viewing participation through a learning lens helps reveal not only how institutions act but also how they think and adapt, as well as how those underlying frameworks might evolve.

Finally, participation should be understood in terms that extend beyond the project cycle. In this case, the citizen panel's advisory letter briefly disrupted standard governance routines, linking administrative, executive, and political domains. Although it did not generate immediate political change, it established a precedent for connecting participatory insight with democratic debate: a slow-building form of institutional change also visible in the City Labs model [18]. As Salinas et al. [23] note, anticipatory innovation

benefits from treating speculative interventions not as isolated critiques, but as learning moments that can seed future institutional transformation.

Together, these insights support the case for complementing ladder-based participation models with perspectives from collaborative and institutional learning. Where the ladder emphasises levels of influence, learning-oriented approaches emphasise reflection, mutual understanding, and the evolution of institutional capacities. In this light, the scan bike project does not simply fall short of its participatory goals – it demonstrates how learning occurs even when influence is limited, and how such learning can be leveraged beyond the end of the project for more grounded, pluralistic, and responsive innovation practices in the future.

6.3 Transferability: Amsterdam's technological and participatory infrastructure

Our findings should be understood in the context of the particular organisational and policy landscape of Amsterdam. In recent years, the city has shifted its approach to technology procurement toward greater in-house development capacity. The municipality has made deliberate choices to develop its own machine learning models and algorithmic applications, rather than relying exclusively on market solutions, which enables greater data control and alignment with public values.¹⁸ This internal capacity facilitates iterative adjustment of systems based on feedback from participants, whereas cities relying on external vendors face longer procurement cycles and less flexibility to incorporate such feedback mid-project. Additionally, Amsterdam has institutionalised citizen participation as a mandatory component of policy development. Since 2020, all policy proposals submitted to city executive bodies must include a participation paragraph documenting how citizens were involved in the policy-making process.¹⁹ This mandate creates organisational accountability for participation that may be lacking in contexts where participation remains discretionary. It also makes it easier to justify the allocation of resources to citizen engagement, allowing the city to draw on existing infrastructure and expertise for activities such as participant recruitment. These characteristics, the capacity for in-house technology development and the institutionalisation of participation, facilitated the participatory and iterative practices that we observed in this study. Cities lacking comparable technical infrastructure or formal participation requirements may face different challenges when implementing similar approaches, potentially limiting the direct transferability of our findings.

6.4 Concluding Remarks

This paper investigated the tensions between participatory ambition and institutional capacity in smart city R&D through a detailed case study of the design and development of object recognition technology. Observing six thematic developments over the course of one year, we found that while citizens achieved meaningful collaboration early on, their influence was consistently reduced during the implementation phase. However, this apparent descent down the participation ladder revealed a more nuanced dynamic: institutional learning and future-oriented commitments that suggest

¹⁸<https://www.rekenkamer.amsterdam.nl/onderzoek/algorithmen/>

¹⁹<https://www.rekenkamer.amsterdam.nl/onderzoek/participatieparagraaf/>

participatory impact unfolds across longer timescales than those of single projects. Our analysis supports complementing ladder-based approaches with learning frameworks that recognise how advisory participation today can establish precedents and institutional reflexivity for more responsive governance tomorrow.

Declaration of AI Use

The authors utilised AI-assisted tools, including Writefull, ChatGPT, and Grammarly, solely for copyediting and proofreading of the manuscript text. All original content, ideas, analysis, and conclusions were developed and written by the authors. No AI tools were used in the generation of research ideas, data analysis, or the creation of substantive content.

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Enacting Utopias: A Participatory Design Approach to AI

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Abstract

In this paper, we explore what a participatory design (PD) approach to artificial intelligence (AI) could look like coupling foundational PD work on empowerment and learning for local development with the concept of enacting utopias and its focus on cross-sectoral collaboration, expansive learning and transformative agency. We suggest that PD could offer a unique position in between utopias and dystopias of AI, focusing on empowering people and organizations to make informed decisions about AI to pose demands to the introduction of AI in work practices. To demonstrate this approach, we report from a case study where we hosted workshops in collaboration with a Union and 53 union members, to help them develop skills, knowledge and agency related to AI. Based on our case, we argue that PD could play a more prominent role in empowering people to take active part in shaping how AI is introduced into the workplace. The main contributions of this paper include a concrete workshop format based on PD principles to facilitate AI literacy and introducing the concept of enacted utopias as a frame to guide PD efforts regarding AI.

CCS Concepts

• **Human-centered computing** → *HCI theory, concepts and models*.

Keywords

AI, Participatory Design, Enacting Utopias

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1 Introduction

The increasing adoption of artificial intelligence (AI) technologies among governments, organizations and companies has spurred both utopian and dystopian visions. Utopian narratives include imaginaries where AI will open new possibilities for learning and personal growth, curing diseases by leveraging health data and a renaissance of creative practices as new tools for expression emerge. Dystopian narratives of AI, on the other hand, depict technocratic regimes, unemployment, decline in human skills, and the image of AI development as an immense force driven by big tech over which communities and small organizations have little control. Elements of both can already be found, demonstrated by, for example, AI healthcare systems that successfully detect diseases early and increase chances of successful treatment. On the other hand, some data also suggest that some entry-level jobs are being taken over by AI, leading to unemployment and barriers for young generations to get into the labor market, and that AI systems freely harvest personal or copyrighted data. While AI is likely to have a significant impact on work and life, PD has thus far engaged relatively modestly with AI and as of yet there is no clear positioning of PD's response to this emerging technology.

In this paper, we explore what a PD approach to AI could look like by drawing on foundational PD work on learning and empowerment [7]. We suggest that PD could offer a unique position in between utopian and dystopian narratives, focusing on how PD principles and methods can empower people and organizations to pose demands to the introduction of AI in their organizations, make informed decisions about the use of AI and develop skills and knowledge to work productively and consciously with AI. This approach combines an educational focus, drawn from grounding work in PD, with a focus on concretely impacting how AI is implemented in workplaces. We unfold this approach by leveraging core PD principles from early PD projects and the concept of *enacting utopias* derived from fourth generation activity theory. This concept centers PD activities around pursuing *realistic achievability* of challenges that might initially appear impossible or overwhelming by leveraging expansive learning as a mechanism of social change, pursuing cross-sector collaboration and transformative agency [48]. We demonstrate this PD approach to AI through a case study, where

we engaged with a union and 53 participants in workshops aimed at increasing participants' knowledge about AI and their agency to make decisions about AI within their organization.

We intend this work to speak to multiple audiences: PD researchers who seek to expand the field's engagement with AI; practitioners in unions and worker organizations who want to build AI literacy; and policymakers and educators exploring participatory methods for responsible AI adoption.

The paper is structured as follows: In the next section, we outline PD's historical engagement with big societal issues and technologies, identifying three themes related to designing AI systems, using AI to augment PD and developing AI literacy. We then present the concept of enacting utopias and connect this to grounding concepts from PD to form what we suggest could be a fruitful PD approach to AI. To demonstrate this approach, we report on a case study involving three workshops developed with a union where 53 participants engaged in developing their skills and agency related to AI. Based on interviews with participants, we explore effects and participant gains from the workshops.

2 Background and Related Work

PD has a long-standing tradition of engaging in technological change through democratic processes and collective imagination [24, 31]. Moreover, PD has always been concerned with large shifts in society and explored ways to engage with the potential impacts of technology [27]. Most notably, this engagement was evident in early Scandinavian projects that emerged out of a concern for the potential changes that new technologies were making in the workplace [5] and a need for unions and workers to gain knowledge about technology. Bansler [40] argued that it was important for unions and workers to carry out their own investigations without management to formulate demands for technology to gain a position to negotiate with management. Another area where PD has responded to large technological developments is Shapiro's [49] call for engaging with the large failure rates within the procurement and development of public IT systems. Shapiro argued that PD has a lot to offer to alleviate the observed problems and called for PD's collective engagement. A more recent example of PD engaging with broader cultural and technological shifts is the focus on decolonization [17], challenging Western-centric norms embedded in technology and design, and foregrounding indigenous and local knowledge. This research trajectory has brought about perspectives of pluriversality and generally opened up the PDC community to new voices and perspectives. Looking across the history of PD, Bødker and Kyng [11] rekindled PD's societal commitment and urged the community to "face the big issues" by, among other things, engaging with areas where dramatic changes are underway and by researchers assuming the double role of activists and researchers.

One way in which PD has responded to 'big issues' is by engaging in large-scale projects, contrary to the often found depiction of PD as a field concerned with small short-time projects [13]. Thus, PD has been engaged in large-scale projects such as developing public libraries, as well as entire hospital wards [18][22][51]. Also, the Health Information Systems Project which started out as a custom-made desktop application in one setting, has over several decades developed into a web-based platform used in 50 countries through

different PD processes (singular, serial, parallel and community PD) [46]. Similarly, Balka and colleagues developed a pharmacy system to document and avoid adverse drug events starting with one hospital and then over three, year-long cycles becoming part of the Canadian state's central state base [50]. Common challenges for PD when going large-scale are handling the multitude of different stakeholders and their varying interests, enabling participation, keeping funding and momentum over time while keeping the overall aims of PD in focus. However, a different way of going large-scale is by finding entry points into large organization through which PD can proliferate. For example, PD has become part of primary schools in Denmark through a process where PD researchers were able to promote the concept and teaching module of 'technology comprehension' and eventually work with the Ministry of Education to integrate it into primary school curriculum. Addressing the challenge of AI, Young et al. [55] argue that the point about AI is not size, but its epistemic authority propagated by homogeneous responses across sites. Thus, citizen councils surveying the police's use of AI or enabling the accumulation of the workings of online algorithmic management through an app for workers challenge AI's authority and enable an epistemic authority of participation.

AI can safely be considered both large-scale as well as a big issue, and in the following, we trace PD's engagement with AI as a context for later discussing how the approach proposed in this paper can help address AI as a big issue.

2.1 Participatory Design and AI

The recent advent of AI again marks a significant technological shift to which PD has responded, albeit not yet as substantially as other areas such as, for example, Human-Computer Interaction. Historically, PD and AI go back to at least the mid-1980s, where PD was argued to be essential for human-centered design of AI and the involvement of relevant stakeholders in the process [30]. Eventually, this led to the establishment of the journal "AI and Society" in 1987, to which PD continues to contribute, including discussions on responsible AI [47]. Early case studies in the early 2000s, include the application of PD to better tailor health communication to target groups [43], and to develop a system to automate attorney document reviews through a collaboration between litigators and computer scientists [21].

Within PD conferences, Bratteteig and Verne [14] were the first to explicitly address AI, asking whether AI would make PD obsolete. Answering in the negative and arguing for the relevance of PD, they pointed at three main challenges: For designers to understand a technology whose algorithms are opaque; for users to evaluate design ideas since AIs change over time; and how to distinguish between training and use, since these are interwoven with AI. They argue that "The fact that ML as a technology changes over time and hence may behave unpredictably, fundamentally challenges the basic PD value of securing control of the user's own environment and tools – securing user's agency." ([14], p.4). Since then, PDC papers on PD and AI have appeared focusing on its application in, for example, healthcare [33] and newspapers [44]. Also, PD has been argued to be an effective means to counter 'AI realism' – the assumption that AI is an inevitable and natural order – by providing a process through which alternatives can be explored [29]. Van den

Broek et al. [53] provide a systematic review of opportunities and risks of using AI to support stakeholders in PD, and conclude that “... AI can support participatory design by lowering the participatory threshold, and facilitating process execution, collaboration, and creation. However, using AI also risks relying on undesirably biased models, causing cognitive overload, and stakeholders fixating uncritically on AI input such that it diminishes participation, performance, and the quality of design outcomes” ([53], p.42).

Complementary to the above sketch of a PD-AI timeline, the literature can be divided into three thematic groups: First, how to design AI through PD processes; second, the use of AI in PD processes; and third, raising AI literacy through PD methods. In the first group on using PD to design AI, we find papers on how to envision AI with children [2, 15, 19, 54], deaf and hard-of-hearing children [38], women and risk-detection on social platforms [20], operators in industry [34], the design of a communication bridge between employers and employees [39], and healthcare [33, 57]. In the second group on the use of AI to facilitate and augment PD processes, we find papers on the use of image-generation AI to facilitate collaboration in the design of a public park in Los Angeles [32], design proposals for welfare technologies for older adults [35], and for stakeholder involvement generally [56]. The third thematic group on using PD for AI literacy, includes AI literacy for children [2, 19, 54] and extending literacy into literacy for adults more generally [37].

In addition to the above three themes, we should mention the emerging field of ‘participatory AI’ focusing on how to broaden participation in the design of AI beyond computer and data scientists. For example, an online tool for users to evaluate different ML models [56]. However, participatory AI has been criticized for a lack of emphasis on central PD values such as empowerment and redistribution of power, and thus several papers argue for strengthening the PD elements in participatory AI [4, 41, 55]. Notably, Young et al. [55] propose ways in which public participation can be leveraged, for example, to enable community control of police surveillance, facilitate workers’ reverse engineering of platform algorithms, and recover complaints about gender-based violence by the police.

Overall, the interrelations between PD and AI have a long historical trajectory that has become more pronounced with the advent of generative AI. Also, PD has a history of addressing large-scale organisations and IT systems providing experiences and suggestions for how to embed PD in such contexts. However, when looking at the uptake of AI in other research areas, it may be argued that PD’s engagement with new generations of AI systems remains somewhat modest and there is a need for finding entry points into the scale of AI. In particular, one of the less emphasized aspects is that of using PD processes to develop AI literacy and empower participants to make informed decisions about AI in their work, which is where this paper seeks to contribute.

3 Enacted utopias: A PD approach to AI

Extending existing work on developing AI literacy and agency through PD outlined above, this section draws together principles from early PD with the concept of enacting utopias as the frame for the suggested PD approach to AI. While current developments in AI pose new challenges to participation, agency, and control,

they also resonate deeply with past moments of technological transition. One such historical reference point is one of PD’s early flagship projects, Utopia, from the 1980’s, where PD played a significant role in co-developing alternative technologies for graphic design workers [9, 10, 25, 52]. Rather than treating technology as a fixed given, the project approached design as a collaborative and exploratory process in which workers and researchers jointly developed prototypes to critically assess and jointly shape future tools. This integration of evaluation and design enabled workers to articulate their own quality criteria and participate meaningfully in technological change. Bødker [6] argued that such participatory experimentation is essential not only for developing better technologies, but for empowering users to influence the systems that shape their work lives. This educational perspective features prominently in early PD [7] and is an important component in the approach to AI suggested in this paper. Specifically, we draw out three core principles from the Utopia project to forward a PD approach to AI concerns: First, the technologies developed should enhance the quality of both the work processes in which they are used and the resulting outcomes. Second, the educational initiatives developed around the technology should support the advancement of competencies and enable active participation in the ongoing development of technology and workplace organization at the local level. Third, both products and educational efforts should support democratic decision-making processes and promote equality in the workplace [7].

Although the focus in the Utopia project was not AI, but integrated text and image processing, the underlying concerns remain strikingly relevant to current discourses around AI, namely engaging those affected by technological change to take part in shaping it, focusing on education and skill development, and insisting on democratic processes. Besides the three principles outlined above, PD as a research field also offers proven collaborative methodologies, such as cooperative prototyping, facilitating meetings between diverse stakeholders and formats for gaining hands-on experiences with new technologies. Despite this resonance, the question remains what a PD approach to AI could look like, how impact can be created when faced with a roaring AI industry and how to move beyond unproductive utopian or dystopian positions. We suggest that PD should inhabit the middle ground, by focusing on enacting utopias understood as the pursuit of what is realistically achievable through collaborative efforts. We draw these concepts from fourth generation activity theory and in particular from the work of Sannino [48] who presents the concept of “enacted utopias” to describe collective, practice-based efforts to tackle complex problems and realize visions that are often dismissed as idealistic or unattainable. Drawing on the case of working to eradicate homelessness in Finland, Sannino [48] explores how coordinated efforts can in fact help solve what may seem as insurmountable problems. Specifically, Sannino [48] suggests a series of mechanisms as being central to this approach, including: Cross-sectoral collaboration, leveraging expansive learning as a mechanism for change, and supporting transformative agency. We suggest that these mechanisms both resonate with PD’s historical commitments from the Utopia project as outlined above, but also articulate a practical path forward for PD to inhabit the space of realistic achievability between utopias and dystopias of AI. Regarding the cross-sectoral collaboration,

this is already well-known mechanism in PD of bringing together diverse stakeholders to co-design solutions. Expansive learning entails cycles of participants questioning, analyzing contradictions and designing new solution to move beyond established practices. Finally, supporting transformative agency entails participants confronting conflicting motives (e.g. promises and perils of AI) and use tools to chart new paths ahead. Towards these three mechanisms, PD offers concrete ways of putting these mechanisms into practice, through hands-on collaborative activities, infrastructuring across sectors and organizations, and facilitating collaborative prototyping of new solutions.

In the case study in the next section, we explore how this PD approach to AI, practically engaging in the middle ground between utopias and dystopias, might look in practice. Specifically, we focus on the practice-based cross-sectoral collaboration between University, Union and participants from various organizations. Moreover, we demonstrate how the workshop setup merged PD principles with the idea of enacting utopias.

4 Case: Developing AI with Unions

The project was a collaboration with the Danish Association of Masters and PhDs (DM) which is a trade union representing employees with academic backgrounds employed across the public and private sector. Three workshops were executed with a diverse group of members ($n=53$). In this section we describe the workshop setup, the engagement with the Union and its members and our data collection. Specifically, we highlight how the workshop design and the engagement with Union's members draws on key PD principles outlined in the previous section.

4.1 Overall concept, recruitment and data collection

The overall concept of approaching the challenge of empowering union member with skills, knowledge and agency related to AI through a workshop format, emerged from ongoing discussions with the Union. The overall approach was informed by two main elements. First, Union consultants provided detailed knowledge of member profiles which informed discussions around the level of prior knowledge about AI among members, overall recruitment strategy and AI adoption within union member organizations. Second, researchers brought to the table the PD agenda framing the initiative as a collaborative activity that would couple hands-on activities with work to empower participants to bring knowledge and ideas to impact their own organization. Moreover, the workshops were also informed by existing models for AI education from the researchers' prior work. This materialized in a five-hour workshop format (see details below) which was executed three times with varying group sizes ($n=13$ – 20) over a period of two and a half months. Minor adjustments were made between workshops related to presentation, timing of exercises and examples, but the workshops remained otherwise largely unchanged across the three iterations.

We chose to collaborate with a trade union because unions represent a collective organizational structure with a long history of engaging with technological change. This made them a natural partner for exploring how PD approaches can be applied to AI. In

addition, unions act as intermediaries that can mobilize diverse members across workplaces, enabling both breadth of perspectives and collective reflection.

Together with the Union, it was agreed that the main goals of the workshops were to help participants: Identify and describe the technical components of AI systems, analyze the potential applications of AI in their own work, and develop ideas for concrete applications of AI in their organization, and reflect on the possible positive and negative impacts of implementing AI within their organization.

4.1.1 Recruitment and participants. Participants were recruited from the Union's members base using its regular channels which included newsletters, web services and social media for members. Participants were asked to complete a questionnaire when signing up, detailing their experience and knowledge about AI, their place of employment and basic demographic information. Among the 53 participants who signed up and attended across the three workshops, 21 identified as female and 32 as male. On average, the participants were 48 years old and had about 22 years of work experience. The participants reported working across the private and public sector in areas such as education, finance, municipalities, libraries and universities. In terms of roles, the participants reported a broad range, including various manager roles, IT expert and coordinator, with the most prevalent role being internal or external consultant. All participants gave their written consent to participating in the workshop as part of a research initiative, and agreed to be contacted at a later stage for a follow-up interview.

4.1.2 Data collection and analysis. Both quantitative and qualitative data was collected before, during and after the workshop. The quantitative data was collected with the aim of measuring knowledge retention and self-efficacy among participants regarding AI. This was done by administering a questionnaire to participants prior to the workshop, immediately after the workshop and three months after the workshop. The results of the quantitative study are reported elsewhere [37] focusing on changes in reported self-efficacy and knowledge retention. The qualitative study, which is the main focus of this paper, consisted of interviews ($n=8$) with a subset of the participants ($n=4$) as well as Union representatives ($n=3$) and the head of the Union ($n=1$) conducted approximately six months after the workshop. Inspired by PD literature on assessing user's gains [12], the interviews centered around participants' experience of the workshop activities, what they gained (knowledge, skills etc.) and how this subsequently impacted their work-life. This focus directly reflected our research interest in exploring how a PD approach to AI can empower participants to make informed decisions about AI and make concrete changes within their organization.

The interviews were conducted online by a member of the research group who had not taken part in the workshops. The interviews lasted between 30 and 45 minutes and were recorded and transcribed for analysis. All interviewees were informed about the purpose of the interviews and consented to taking part. The transcribed interviews were subjected to directed content analysis [1] with a set of theoretically defined main themes for coding, namely interviewees' motivations for participating, what they had gained, and how this had impacted their work life. Within that framing, three of the authors went through several iterations of interaction

with the data set to develop a variety of candidate codes and tested these on different parts of the data in order to arrive at a coherent set of codes and a uniform coding practice. Subsequently, the final codes were applied to the entire data set leading to the construction of a set of themes within the main categories (motivations, gains and impacts). The coding process was hence conducted through a process of constant dialogue, resolving differences and the achievement of consensus regarding interpretation of codes and coding. The analysis in section 5 is structured by presenting the themes under the headings related to the three main categories.

4.1.3 Limitations. The relatively small number of follow-up interviews ($n=8$) constrains the depth and saturation of the qualitative material, and we therefore refrain from making claims of broad generalisability. We focus here on the qualitative findings that illuminate how PD can foster agency and AI literacy. Also, because participants volunteered to take part, they were likely already motivated and interested in AI-related issues. This self-selection may mean that our sample is not representative of the broader population of Union members. We therefore view our findings as indicative of possibilities for PD in AI literacy.

4.2 Workshop structure

The workshop was structured around six activities. These activities reflect both PD principles related to education, collaboration and hands-on exploration and mechanisms from the concept of enacting utopias, including cross-sectoral collaboration, expansive learning and supporting transformative agency. Throughout the workshop, one of the authors acted as facilitator, introducing AI, exercises and discussions, while another researcher documented activities.

4.2.1 Activity 1 (15 min): Welcome and introduction. The first part of the workshop was a brief introduction to the workshop and a round of presentations by the participants and organizers. Apart from the general introduction to the program, the first part focussed on having participants articulate their motivations for taking part, their current experience or ambitions related to AI and getting a sense of the different organizations represented at the workshop.

4.2.2 Activity 2 (50 min): AI Fundamental. The second part of the workshop (40 min.) consisted of researchers introducing fundamental AI concepts, focusing on the central concepts of data, model and output within a historical frame of how AI has developed over the years.

4.2.3 Activity 3 (20 min): Group discussion on ML potentials and challenges. Extending the introduction to AI fundamentals, the third part of the workshop was spent discussing three cases of AI use: AI used in coffee production for flavor development, predictive child care, and AI in cancer treatment. Based on a brief introduction to these cases, participants were divided into groups to discuss potential impacts, benefits and risks of introducing AI systems into workplace settings. In relation to PD principles and mechanisms for enacting utopias, the focus was to expand the potentially conflicting and difficult dilemmas involved in using data and AI systems for commendable purposes but at the same time managing privacy risks and broader impacts to workers and organizations in the process. Also, this activity served to begin the dialogue among participants

who came from various organizations, to share experiences, be inspired and potentially build networks across organizations. The final part of activity 3 provided time for asking any questions related to the technical, conceptual or other aspects of AI that the researcher could answer.

4.2.4 Activity 4 (60 min): Hands-on experience with ML. Activity 4 shifted from introduction and discussion to hands-on activities with AI systems using ml-machine.org and Micro:bits. The ml-machine.org service is an authoring tool that invites users to explore the basics of AI and machine learning through hands-on experimentation using Micro:bits [3]. Micro:bits were handed out and introduced to all participants who were then tasked with training a custom model to recognize three different kinds of movements of the micro:bit: circular movement, shaking and not moving (picture 1). The ml-machine.org online environment supports this activity by letting participants connect, train and visualize movements with the Micro:bit. Having trained the model for these three instances, participants were asked to define their own movement (e.g. linear acceleration, figure eight), collect data by moving the Micro:bit and making sure that the model could recognize the different kinds of movement. Participants were given some time to play around with the Micro:bit and ml-machine.org system and training the model to recognize various kinds of gestures and defining outputs (sounds, light) to be displayed on the Micro:bit. Besides providing a simple PD inspired hands-on approach to exploring the basic mechanisms of AI and machine learning systems, this exercise also facilitated lively discussion about why the model sometimes made mistakes in identifying movements and gave false outputs, and the importance of training in terms of making a robust model. The researchers focused on broadening this discussion beyond the simple gestures of the Micro:bit to general issues around what is needed to trust the outputs of AI systems and the importance of data and model training.

4.2.5 Activity 5 (90 min): Designing and analyzing ML systems in practice. The last major activity of the workshop shifted focus towards design, encouraging participants to imagine the potential of using AI within their own organizations and not least the challenges that this would entail. Participants were urged to think through the potential technical, cultural, political and ethical aspects of implementing AI in their organization. To make the activity as concrete as possible, the participants were divided into smaller groups and challenged to sketch a high level design of their AI system, including pseudo specifications of the data that needed to go into the system, which functionalities the system should contain and who the different users and stakeholders would be. Before presenting their design to others, participants were encouraged to critically review it in terms of its potential use, values and their potential consequences for colleagues, users, clients and the broader context. To support this analysis, participants were provided with a circular model, inspired by [23], depicting their design in the middle and different issues (use, values, consequences etc.) surrounding it (figure 2, left). This activity embodied the mechanisms outlined by Sannino [48], analyzing current work activities and envisioning realistic and achievable changes locally.

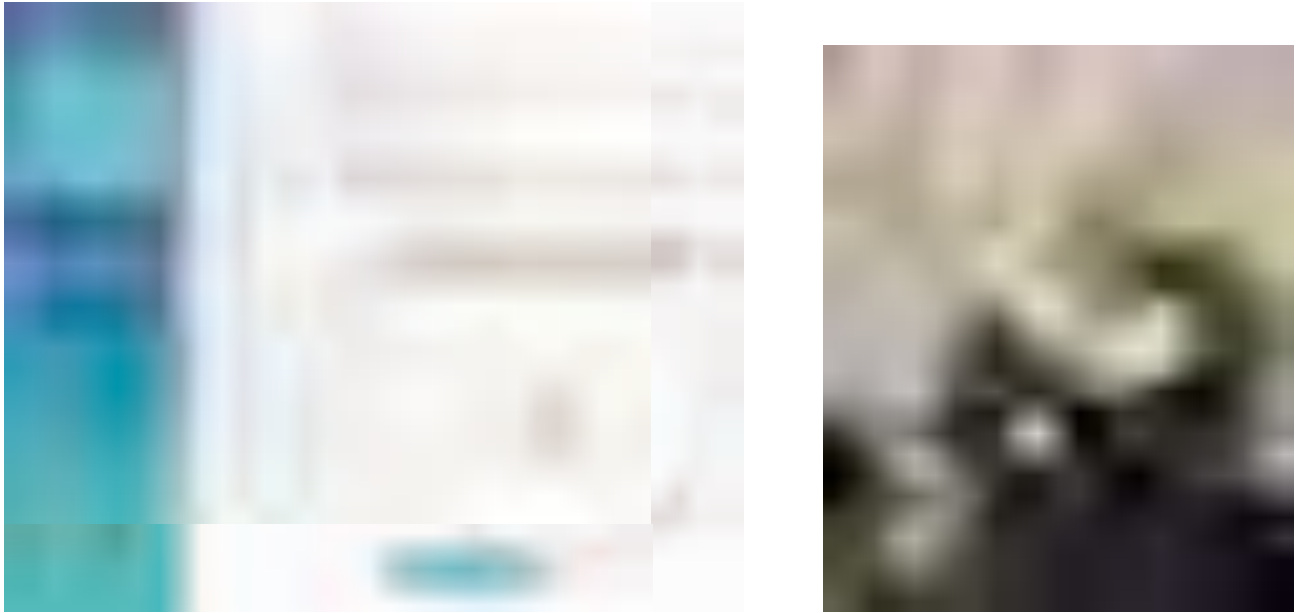


Figure 1: Left: ml-machine.org environment. Right: participants using micro:bit to train the model

4.2.6 Activity 6 (30 min): Presentation and discussion. In the final part of the workshop, the designs were presented in plenum which formed a foundation for a discussion of the challenges and opportunities of introducing AI systems within the participants' organizations. Before wrapping up the workshop, participants were given a key chain holding cards that contained the central concepts, questions and prompts used in activities 4 and 5 (figure 2, right).

Together, the purpose of the six activities reflected a commitment to empowering participants to make informed decisions about AI in their work, by gaining knowledge about how AI works through hands-on activity, tackling dilemmas related to AI, sharing experiences and building networks across organizations, and being prompted to work on realistically achievable ideas for implementing AI into their own organization. In the following section, we present the results of the interview study conducted approximately six months after the workshops aimed at eliciting participants' motivations, experiences, gains from and the impact that the activities had had within their organization.

5 Results

This section presents the themes developed from analyzing the interviews with participants, Union consultants and the Union top management. The themes are organized around the overarching categories as described above (Section 4.1.2); Interviewees' motivations for participating, what they had gained, and how this had impacted their work life. Participants from the various organizations are marked P (P1-P4), Union consultants are marked C (C1-C3), and the Union head is marked H1.

5.1 Participants are motivated by curiosity, hype and practical application

The participants report several factors that motivated their participation, some of which tie directly to their work situation while

others relate to general curiosity. All participants talk about a current or potential application of AI in their place of work as an important reason for signing up for the workshop. As an example, P3 explains that his place of work deals with large amounts of data regarding how external examiners are assigned for different tasks, and he is curious as to how AI might be used to make sense of this data. P2 explains that her place of work already uses some generative AI functionality and that she was particularly interested in exploring issues around privacy as she deals with sensitive personal information. Besides the motivation related to specific work applications, participants also report a more general curiosity towards AI as a reason for signing up. The general surge in the discourse around AI cuts across the interviewees as a motivating factor. Interviewees talk about both public discourse, about conversations with colleagues and the general awareness of the issues at their place of work as a background for their participation. For some participants, this is articulated as leading to curiosity and others describe it more as a response to the somewhat "hyped" status of AI.

5.2 Unions are motivated by empowering members and staying relevant

From the Union's perspective, the motivations for arranging the workshops around AI are articulated by both the consultants who took part in shaping the workshop activities and the head of the Union who speaks to the broader strategic perspective. Across these two groups, the idea of empowering Union members stands out as a central motivation fueled broadly by the observation that AI is increasingly being adopted in work settings, but most pronounced by the belief that AI will result in significant shifts in labor market realities in the near future. Union consultants and management list a number of potential negative effects that warrant the Union's active engagement in AI, including that jobs may be threatened as AI systems replace job functions and that these technologies risk

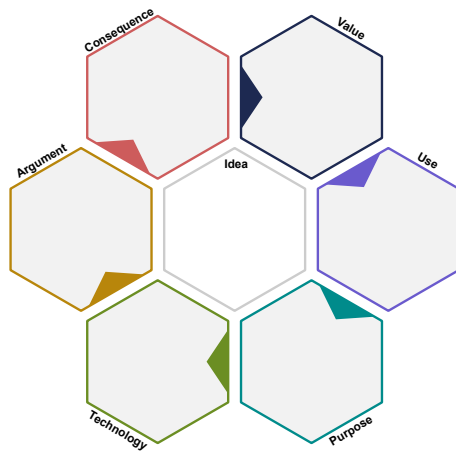


Figure 2: Left: Model for participants to critique their designs. Right: key chain handed out to participants

creating inequalities between people that have varied AI skills. One of the Union consultants explains that it is the job of the Union to make sure that members: “can flow with the [AI] wave rather than being washed over by it” (C2) and that AI is a fundamental “force of change” (C2) throughout society. These metaphors eloquently capture the perspective found across the interviews, namely that AI is an inevitable and unstoppable force, and that the right thing to do for unions is to prepare and up-skill workers for this reality. From the perspective of the Union itself, the issues of “staying relevant” is also articulated as a matter of maintaining an image of an organization that deals with the issues that are most pertinent to its members. C1 explains that the Union, as many other public organizations, does not have AI competencies in-house and hence looks to external partners to setup workshops such as the one in question. Moreover, the Union consultants also speak to the initiative as something that aligns with the image that the Union wants to build and maintain. C3 explains that they experience prejudice in terms of what the union is - some of them positive but also some negative that reflect the view that unions are mostly for public employees and that unions are not very up-to-date on digitization. For C3, this initiative is about building a more modern image externally as well as about the image within the organization itself. A notable issue raised by the Union head (H1) is the fact that AI risks creating social inequalities in the job market, where people who do not have AI skills become second rank workers. H1 specifically mentions the idea of “people being left behind” and the risk of creating a “primary and secondary class of workers”. Moreover, H1 argues that from a union perspective, the challenges and opportunities of AI should be a collective effort and that it is an integral part of the union’s role to ensure equal opportunities in the labor market and to support a collective engagement with AI.

5.3 Participants gained a technical foundation and network across organizations

In terms of outcomes gained by the participants, these fall broadly within two overarching categories. The first relates the technical

knowledge that participants gained about AI and the second relates to the experiences gained from engaging with other participants.

5.3.1 A technical foundation. It is clear from the interviews that all participants gained a deeper knowledge about how AI works from a technical perspective. Several participants articulate this as having gained a “better foundation” for understanding what AI is and what the underlying mechanisms are. P3 explains: “I got to understand what it really is we are talking about [AI, ed.], what are the mechanisms at play and how can you use that. I think I got a deeper understanding of that”. In line with P3, P1 speaks specifically to how the workshop provided a better understanding of the different forms of AI and machine learning and the underlying statistical mechanisms. In terms of how the workshops facilitated these insights, several participants point to the physical exercises using the Micro:bits and ml-machine.org in the fourth workshop activity as a rewording experience. P4 explains: “It made a big impression [the Micro:bit exercise, ed.]. It was like my key to understanding what this [AI, ed.] really is and how I can work with it moving forward”. P1 specifically notes the relationship between the hands-on pedagogical approach using the ml-machine.org that had been adapted from a school context and the more theoretical concepts “for me it worked really well with this 7th grade exercise [...] it has been a while since I was in 7th grade but I liked the coupling between the hands-on doing and the theory behind AI”. Similarly, P4 speaks to the quality of the hands-on experience “Now I get the reasons why I get the kinds of answers I do [when prompting, ed.]. It’s about probability really [...] this was really an eye-opener for me”. Here, it is also notable that the hands-on activities connected directly to P4’s practice of prompting in his everyday work. The hands-on exercise proved a significant gain even though several participants had expected something very different going into the workshop, for example P3: “I was expecting Researcher Name [ed.] to come and teach about how to be really good at prompting. But that did not turn out to be the case. But we had a wonderful day anyway, which was really exciting, and I gained something different than what I had expected”. Finally, one of the participants also noted

that the workshop also gave renewed motivation to work with AI in her own organization.

5.3.2 Network across organizations. In addition to gaining a better technical foundation, a prominent theme in the interviews is the value gained from discussing and working with people from other organizations during the workshop. The participants in the three workshops came from very different organizations. Moreover, individuals and their place of work had very different levels of experience and approaches to AI. Despite these differences, hearing from others and learning about their ideas, ambitions and concerns was highly valued. When asked about what stood out from the workshop, P4 explains “the part where we did an exercise in groups where we had to couple our knowledge of AI with our respective organization” and continues “it’s not only exciting to hear about other peoples’ experiences, but you also see new connections when you talk to other people, and that gave me motivation to delve deeper into this [AI, ed]”. P2 also highlights the importance of hearing about how other organizations work with AI emphasizing that sharing ideas and forming network is an “an important step on the way”. Across the interviews, there is a clear sense that none of the organizations represented had a clear strategy nor substantial experience in working with AI but, even so, sharing experiences was deemed important. This is also reflected by a general sense among the interviewees who appreciated the exploratory nature of the conversations and sharing early thoughts and concerns outside of their normal work environment.

5.4 Impact within everyday work environment

The final category relates to how the workshop inspired actions in the everyday work environment for participants. For several of the participants, the workshop impacted and became related to concrete initiatives back in their organizations. For P4, the main impact was “food for thought” that related to an ongoing project within his organization about using AI solutions for processing texts that students attending courses would produce. For P4, this led to looking at this problem from a new perspective based on the knowledge acquired in the workshop. For others, the workshop spurred new conversations with colleagues; P2 for example: “So in our communication department, they use it [AI, ed.] for texts right, and some people use it to find literature lists, and I have opened up for a conversation about this. And this is a way of bringing us forward”. Another aspect in which the workshop resonated with everyday work practices for participants related to their sense of gaining more foundational knowledge about AI. P1 reports that the timing of the workshop was perfect since her organizations was right in the middle of implementing AI technology into their work with robots. She explains “it was timed perfectly [the workshop, ed.] I was really well prepared [for working with AI in robots, ed.] with this foundational knowledge”. The nature of these impacts across the participants are generally to provide knowledge necessary, to spur discussion and to initiate broader reflections. The workshop did not in itself foster specific new projects and, as one of the participants noted, this was not really to be expected based on a one-day workshop.

6 Discussion

The purpose of this paper is to explore what a PD approach to AI could look like, when inspired by PD’s foundational focus on education and collaborative hands-on activities, coupled with the framing of enacting utopias. We position this approach in the middle ground between utopian visions of AI’s promises and dystopian visions of AI’s potential negative impact. We suggest that there is a productive space in between, where people and organizations pursue achievable, meaningful and informed local solutions to problems and opportunities related to AI. While there is certainly a case to be made for PD to engage in large scale processes of change [49], we argue that PD can leverage its core principles and practices towards empowering actors to make changes that may eventually scale within and across organizations. In this discussion, we address three issues related to PD’s engagement with AI: first we discuss results from the interviews in terms of the merits of the proposed approach to AI; we then discuss the proposed PD approach in light of existing PD literature about PD’s engagement with “big issues” [11]; and finally we discuss how the concept of enacted utopias and more broadly ideas of fourth generation activity theory could be useful for PD moving forward.

6.1 Making a case for PD in AI literacy

Looking across the results from the interview study, there are three things in particular that stand out and speak to the potential of employing PD principles around education and empowerment through collaborative hands-on activities, coupled with enacting utopias’ focus on realistic achievability. First, it is notable that the hands-on activities employed in the workshop were instrumental in fostering what participants termed “a better knowledge foundation” about AI. This was particularly evident in the activities where participants spent time exploring Micro:bits and the ml-machine.org environment. This speaks directly to PD’s educational potential by utilizing collaborative hands-on activities that provide participants with hands-on experience of a technology. As argued by Bødker [6], hands-on experience is essential in order to pose meaningful demands to technology. The technical setup and the exercises were inspired by educational material produced for primary education, yet as noted by participants, the very simple interface and exercises worked well, and notably they facilitated a broader discussion about the central role of data and model training when it comes to AI. Second, while the workshop did not foster the development of new technologies as such or larger projects in the host organizations, several participants did report concrete actions and initiatives being taken based on the workshops, including new workplace conversations being initiated around AI usage. Returning to the mechanisms outlined by Sannino [48], there are arguably signs from the interviews that some of the participants succeed in transforming their agency by gaining new perspectives on existing problems in their organization. For example, P4 specifically reported that the workshop led to exploring new ways of using AI in text searches and P2 reported that the workshop made her initiate new conversations with colleagues in the communication department about how they used AI for literature search. While these, by some measures, can be considered minor or weak signs, we suggest that they are considerable results given that they emerge from a one-day workshop. Third,

the importance of sharing experiences across networks features prominently in the interviews as an important gain for the participants. The importance of networks and creating socio-material infrastructures for new initiatives is well documented in the PD literature [8, 36] primarily in relation to sustaining new initiatives. In the workshops reported here, networking is primarily related to the educational purpose of the workshop and sharing around issues that are difficult and with which participants have little or no prior knowledge. Moreover, returning to the focus on cross-sector collaboration, Union consultants were indeed very articulate about the importance of unions engaging with the AI agenda and providing members across sectors and organizations with the means necessary to deal with AI.

Together, the results support the proposition that a PD approach focused around the educational efforts can in fact create meaningful benefits for participants in terms of knowledge, networks and agency to act within their organization. We suggest that there is an important role for PD to play here in contributing to the broader field of AI literacy by both refining what AI literacy could mean from a PD perspective, and by providing tools and methods to foster AU literacy. While much work has been done on AI literacy, much of this work has been situated in formal education, which differs substantially from work environments, and the few contributions that deal with AI literacy in relation to the workforce offer less in terms of how to actually foster literacy. Here, we suggest, PD could potentially play an important role and the case presented here serves as one illustration of this.

6.2 PD, AI and the big issues

Our findings suggest that PD can contribute to AI literacy by creating collective spaces where participants jointly unpack AI's technical components and social implications. This builds on earlier PD traditions of mutual learning, where workers and researchers co-constructed understanding of technology, and extends them to contemporary challenges of algorithmic systems. By situating AI literacy in collaborative workshops, PD offers methods that are not only informative but empowering, enabling participants to translate abstract AI concepts into concrete implications for their organizational settings.

As noted earlier, AI constitutes what Bødker and Kyng [11] termed a "big issue" and there are ample reasons for PD to engage forcefully as AI could potentially create fundamental shifts related to work, skills and democracy. Bødker and Kyng [11] provide a series of suggestions for how to conduct PD that matters, including addressing areas where profound changes are underway, active partnerships, researchers also assuming the role of activists, and aiming for high and lasting impacts. In light of these suggestions, the approach outlined in this paper resonates with the call for addressing an area of significant impact. Also, a key component in our work is the collaboration with the Union, which played a major role in recruitment and providing the organizational frame for the workshop activities. With regards to working towards high and lasting impact, the scope of what we propose here is, for the time being, more modest. As is documented throughout the PD literature, lasting impact potentially requires substantial and prolonged work across arenas [28] to establish infrastructures [8], strong social

relations, [16, 42] and eventually sustainability [45] of results and broader impact. These issues have not been systematically pursued within this project. However, the project does demonstrate that concrete local impacts can be achieved through a relatively brief workshop format. In essence, this echoes the grounding principle of the original union projects to create education for local development and share experiences with technology introduction. Yet, there is certainly still ample opportunity and need for PD to engage more broadly with AI. As noted in the background, PD has a long standing engagement with AI, but thus far only modest engagement with the educational challenge related to AI literacy and empowerment. We suggest that this is an area where PD is indeed well suited to contribute, not only with proven collaborative methodologies, but with framing the challenge as a concern for quality of work and product, skillfulness and maintaining democratic control. The latter, pertaining to democratic control, is particularly pertinent when faced with AI services that are largely black-boxed in terms of their functions and offer little in terms of transparency and accountability of outputs. Moreover, PD's recent engagement with alternatives to Western centric perspectives offers a much needed critical perspective to issues of the data upon which AI models are trained and potential cultural biases.

6.3 Enacting utopias in PD

In this paper, we have used the concept of enacted utopias [48] as a frame for positioning our workshops and approach within the space of what is realistically achievable. The concept is drawn from fourth generation activity theory, and emphasizes how concrete changes can be fostered by stimulating process of expansive learning, transformative agency and cross-sectoral collaboration. The concrete contribution of this concept in our case, is twofold. First, it provides an orientation for exploring collective, practice-based efforts aimed at achieving meaningful change through realistic, situated interventions. We have demonstrated how mechanisms outlined by [48] were meaningfully incorporated in workshop activities, including cross-sectoral collaboration between unions, universities and participant organizations, framing dialogue around dilemmas in AI use and building agency among participants to transcend current practices. While this is not foreign to PD, the enacting utopias concept and associated mechanisms sharpen the focus on how participatory efforts can frame processes of participants transforming their agency and expanding their activities by concretely tackling conflicting views on employing AI in their work. More broadly, we suggest that PD can learn from fourth-generation activity theory how to more effectively connect participatory events with long-term transformation by aligning design interventions with expansive cycles of learning and institutional development, as demonstrated in the case provided by [48].

Second, fourth generation activity theory offers a conceptual vocabulary and methodological grounding for articulating how participatory interventions might scale and sustain impact beyond the immediate moment of design workshops. In particular, fourth-generation activity theory's emphasis on integrating design with organizational change processes enables PD to address long-standing tensions between local empowerment and systemic transformation. As demonstrated in the Change Laboratory tradition [26], participatory initiatives are not confined to isolated workshops but are

situated within evolving activity systems that allow for iterative reflection, learning, and reconfiguration. This resonates deeply with PD's ambitions but extends its reach by offering methodological tools for long-term engagement. As such, PD could potentially learn from activity theory in term of how to embed participatory practices within institutional change efforts that are both sustainable and scalable—two ambitions that have historically challenged PD.

7 Conclusion

We argue for a PD approach to AI that couples core PD principles and practices with the concept of enacting utopias, which serves to position our approach in, what we suggest is, a productive middle ground between utopian and dystopian narratives of AI. Through our case study with a union and 53 participants, we demonstrate what this approach might look like in practice and the potential of PD to engage with AI literacy. The central contribution of this paper is the articulation of a PD approach to AI grounded in the concept of enacted utopias. We contribute (1) a workshop format for developing AI literacy and agency among workers, (2) an empirical case that demonstrates how unions can be entry points for participatory AI initiatives, and (3) a theoretical framing that situates PD between utopian and dystopian narratives of AI.

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Reframing Participation: Inclusion and Democracy in Participatory Design

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Abstract

This paper introduces the key issues emerging from the conversation *Democracy and Participation: Inclusion* and discusses the main themes, tensions, and research trajectories developed across the contributions. The *Democracy and Participation: Inclusion* conversation brings together contributions that critically interrogate participation as a democratic and inclusive practice, demonstrating that inclusion cannot be treated as a methodological attribute (or a procedural requirement), it must be understood as political, relational, and infrastructural work that unfolds over long timeframes and is shaped by institutional constraints and inevitable compromises. Grounded in the established tradition of Participatory Design (PD), the selected papers collectively challenge instrumental, procedural, and depoliticized interpretations of participation. Instead, they frame inclusion as political, relational, and infrastructural work that unfolds over time and is shaped by institutional constraints, power asymmetries, and inevitable compromises. Across diverse issues, including migration and resettlement, incarceration, health and care, ageing, LGBTQ+ communities, and cultural institutions, the papers demonstrate that inclusion cannot be reduced to representation or access, but requires sustained attention to relational labor, temporal commitments, and the conditions that enable participation to endure. This paper synthesizes the main cross-cutting themes of the conversation and positions inclusion as a fragile, situated, and ongoing democratic obligation.

CCS Concepts

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

Keywords

Insert participation, democracy, inclusion, participatory design

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1 Introduction

This Participatory Design (PD) has long been associated with democratic ideals, originating in workplace democracy movements in Scandinavia [3, 16]. Early PD theories framed participation as a means of redistributing power, explicitly positioning design as a political practice capable of challenging managerial control, technical rationalism, and the separation between experts and those most affected by design decisions [17, 19]. This tradition established a normative horizon: participation should enable people to shape the socio-technical conditions of their everyday lives.

Over time, critical studies of participatory practices have shown how participation can also become a new form of tyranny when it is used to legitimize predefined agendas, shift responsibilities onto communities without transferring power, or mask structural inequalities through the language of empowerment [11]. Moreover, inclusive aspirations may be undermined by subtle, yet persistent mechanisms of exclusion embedded in methods, contexts, organizational practices, communicative norms, and institutional constraints. Exclusion concerns not only who participates and in what role, but also how participation itself is configured: what counts as legitimate contribution, which forms of knowledge are recognized, and which risks and costs participants are expected to bear [9, 33].

In response, several scholars have called for renewed attention to power, care, and long-term commitment [7, 8]. These reflections entail a number of conceptual shifts: a move from designing discrete artifacts to designing socio-material configurations and publics; the recognition that participation is not merely a matter of methods, but of complex relationships; and an awareness that inclusivity requires attentiveness to difference, conflict, and histories of marginalization rather than assumptions of consensus or neutrality [28, 29, 34].

A crucial and often underestimated consequence is that inclusion does not fail only “at the door,” but also within participatory processes themselves. Holone and Herstad [22] show how PD in contexts of severe disability necessarily involves tensions and compromises that must be treated as design material rather than methodological failure. Similarly, Hodson et al. [23] discuss how participation varies across phases and through the involvement of proxies and institutions, reframing inclusion as a question of process governance and accountability.

The *Democracy and Participation: Inclusion* conversation aligns with this critical trajectory. Rather than focusing on how to involve more people, the papers ask: who is participation for, whose knowledge counts, what kinds of labor sustain participatory processes, and how inclusion can be pursued under structural inequality. Collectively, they position inclusion as a situated, relational,

and infrastructural challenge that exceeds representation and demands long-term institutional engagement. To make this argument explicit, the paper proceeds in two steps: Section 2 defines the interpretive categories that organize the conversation within the broader PD debate; Section 3 then operationalizes those categories empirically across the ten papers. Next, we provide overviews of the ten papers.

1.1 Ten paper overviews

Processed In *Rethinking Participatory Design as a Political and Pluralistic Practice: Agonistic Coexistence in Prison*, Maramotti and Chiaravallotti investigate a storytelling initiative centered on the “20 Consigli” (“20 Tips”) activity within an Italian prison ward for young adults. The project transformed a basic list of advice for new inmates into a platform for dialogue, reflection, and contestation. Grounded in the theory of agonistic pluralism, the research rejects solutionist design paradigms that prioritize consensus, arguing instead that dissensus and pluralism are generative forces for coexistence in total institutions. The list of tips served as a boundary object, allowing participants with conflicting mindsets, such as a generational clash over how to handle anger, to recognize one another as legitimate adversaries rather than enemies. Ultimately, the study advocates for a re-politicization of participatory design that values the process of democratic inquiry and embodied knowledge over finalized artifacts. This contribution primarily informs the interpretive categories of pluralism, conflict, and the re-politicization of participation.

In *REVERSELAB. Reclaiming Space and Relations in Prison through Art and Participation: Designing for Dialogue and Coexistence in San Vittore prison*, Ligi and Piredda describe a situated design-research project that involved the recovery and reactivation of an abandoned basement ward in Milan’s San Vittore Prison. The multidisciplinary team collaborated with incarcerated workers to transform the site into a space for artistic production and civic dialogue. The project utilized spatial reactivation and multi-voiced sound installations to enact a form of polyphonic testimony, allowing a “Chorus” of fragmented inmate memories to fill former cells. A defining feature of the initiative was the orchestration of guided public openings, which tested the “civic permeability” of the prison by inviting external citizens to engage with detainees acting as hosts and guides. The paper proposes the project as a prototype for relational infrastructures of coexistence, demonstrating how design can rework carceral institutions from within. This contribution primarily addresses infrastructuring, agonistic visibility, and institutions as ambivalent design materials.

In *Hearing Materials, Feeling Participation, Caring for Personhood: Situated Lessons from Participatory Design with Nonverbal Participants*, De Coen, Vetter, and Nieuwenhuis describe a study with persons with late-stage dementia or profound intellectual and multiple disabilities (PIMD), and explore how participatory design can research personhood when verbal communication is no longer possible. The authors argue that participation in these contexts is felt rather than spoken, registered through micro-gestures, rhythms, and atmospheres. Drawing on situated examples, such as recognizing a resident’s counting habit through the introduction of tactile plastic rings, the study proposes three “practical handles”:

interweaving researcher/material positionality, maintaining spatial/relational proximity, and practicing collaborative interpretation. The research critiques techno-solutionism and advocates a posthumanist lens that values the agency of mundane materials (e.g., light, tissues, doormats) in configuring care. This contribution primarily informs the categories of more-than-verbal participation, care, and relational inclusion.

In *Infrastructuring Participatory Scaffolds with People with Profound Intellectual Disabilities in Community Gallery* Chen, Fu, Sato, Chen, and Barbareschi describe a one-year service design study in a Japanese community gallery with co-designed adaptive art workshops to include individuals with profound intellectual disabilities (PIDs) in cultural life. The researchers implemented a four-phase framework consisting of (1) co-designing workshops with stakeholders, (2) art creation by participants with PIDs, (3) public exhibitions, and (4) thematically aligned replica workshops for the general public. By using material and relational scaffolds, such as handprint templates or fabric collages tailored to sensory capacities, the project translated embodied expressions into forms of public legibility. The study demonstrates how PIDs can move from the periphery to the center of community networks through “infrastructural patience” and the alignment of diverse stakeholder expertise. This paper especially contributes to the categories of infrastructuring, mediation, and long temporalities.

In *Participatory Design for Intergenerational Dialogue: How the Voice® Model Can Foster a Longevity Society in the Italian Context*, Borghi, Ferrarini, Leonardi, Butcher, Cosheril, Corner, and Palmarini explore how participatory design (PD) can challenge systemic ageism and foster a longevity-ready society. It introduces the Voice® model, a global ecosystem that uses user-centered research to amplify the perspectives of older adults within intergenerational settings. The research demonstrates how everyday spaces, such as a local food market, can become hubs for social innovation. The market project engaged residents of all ages in redesigning services, eventually leading to the opening of a permanent orientation service for caregivers and older adults. The authors argue that PD rooted in intergenerational inclusion functions as cross-sectoral infrastructure that creates shared social value across the public and private sectors. This contribution primarily informs the categories of long-term institutional responsibility, infrastructuring, and relational continuity.

In *Resettlement Work: Accounting for the Invisible Work of Refugee Community Health Workers* situated in Kentucky, USA, Peer describes an ethnographic study that examines the relational labor of Community Health Workers (CHWs) supporting refugee communities. The author conceptualizes this labor as “Resettlement Work,” identifying it as a distinctive form of “infrastructure” grounded in trust and cultural mediation. The findings highlight how CHWs perform invisible design moves, such as navigating unfamiliar bureaucracies, managing documentation, and acting as privacy navigators for clients on digital platforms. The paper characterizes this labor as a specialized form of frontline care that exceeds formal job descriptions. The research calls for the co-design of refugee resettlement infrastructures that explicitly resource and sustain this critical but unacknowledged care labor. This paper mainly informs the categories of invisible labour, care, and infrastructural maintenance.

In *Encountering, Engaging with and Nurturing Relations in PD Processes – An Explorative Approach to Relational Work and Reflexivity*, Dzierzak, Grönvall, and Marttila investigate the fragile early stages of participatory design by focusing on how researchers encounter and nurture professional relationships in Nordic municipal care contexts. Through a tri-ethnographic reflection, the authors identify dimensions of “relational work,” such as legacy work (balancing past relations), anticipation work (attuning to future needs), and “invisible designing” The study proposes an explorative lens using the metaphor of the “face”, specifically the “formal face” (academic credibility) and “informal face” (everyday vulnerability), to describe how researchers attune to social contingencies. By naming these characteristics, the paper aims to expand the relational language of PD and make the affective labor of relationship-building more legible. This contribution is central for the categories of reflexivity, methodological positioning, and invisible relational labour.

In *Rebuilding Place, Reframing Identity: Participatory visual and environmental tools for intercultural and marginalised communities*, Hosszu and Jekli focus on young refugees and unaccompanied minors in Hungary. This research examines how placemaking and visual communication support integration. The authors present a two-volume toolkit developed over ten years of practice-based research: *Rebuilding*, which focuses on the physical environment for place attachment, and *Open Doors*, which uses visual tools to foster social connection. The toolkit utilizes low-threshold design methods, such as stencils and modular fonts, to help participants overcome language barriers. Case studies show that repeated, small-scale acts of personalization, such as customizing bedside lamps or bedroom doors, cultivate a sense of ownership and safety for youth experiencing “loss of place”. This paper mainly contributes to the categories of temporality, care, and participatory rebuilding under conditions of displacement.

In *Participatory Design through the Lenses of Women Architects and Designers*, Lampert, Tonetto, and de Souza Libânio describe twelve in-depth interviews with professionals across Europe and South America. This study explores how women architects and designers navigate systemic barriers while advancing participatory design as a pathway to inclusive societies. The research identifies core competencies, such as empathetic listening, multicultural knowledge, and transdisciplinary collaboration that challenge traditional hierarchical structures in the field. By drawing on their embodied knowledge and gendered experiences of care and exclusion, these professionals act as catalysts for change, leading projects that range from designing safer public spaces for women to creating accessible environments for neurodivergent students. The paper argues that their practice constitutes a political and ethical stance that centres on pluralism and social justice. This contribution primarily informs the category of positioning and the re-politicization of the designer’s role.

In *Queer, hybrid participatory design: Relational practices and norms for coalition building with rural LGBTQ+ communities*, Lawrence, Boyle, Mayo, Rushworth, Anderson, Wallis, and Walters analyze the first-year of a hybrid PD project with an LGBTQ+ community coalition in rural northern Utah. Utilizing queer relationality theory, the authors examine how hybrid spaces were adapted to prioritize intimacy, desire, and joy over traditional productivity-centered models. The study details the co-creation of community

norms, distinguishing between “fixed safety” (that protect members from risk) and “fluid engagement” (flexible participation styles such as chat, emojis, or silence). By framing technology and planning as relational practices, the research demonstrates how these co-created norms provide a necessary infrastructure for coexistence, sustaining collective agency in geographically isolated and conservative regions. This paper chiefly informs the categories of queer relationality, norm-making, and infrastructural support for coalition building.

1.2 Geographies

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The ten papers in the *Democracy and Participation: Inclusion conversation* span a wide range of geographic settings, moving across urban and rural contexts in Europe, North America, South America, and Asia, and highlighting how participatory design practices are shaped by place-specific social, institutional, and cultural conditions.

The European context is widely represented. In Hungary, *Rebuilding Place, Reframing Identity: Participatory visual and environmental tools for intercultural and marginalised communities* frames the country as a key transit zone within the EU, grounding its analysis in fieldwork conducted in diverse locations, including urban shelters in Budapest, rural villages such as Ágasegyháza and Tiszadob, and other towns such as Fót, Debrecen, Vámoszabadi, Tokaj, and Kőszeg.

Italy emerges as a particularly dense site of inquiry, with Milan functioning as a central hub. *Participatory Design for Intergenerational Dialogue: how the Voice® model can foster a longevity society in the Italian context* focuses on a citizen engagement process developed in Milan, while also referring to collaborative work with the Municipality and Province of Sondrio on a strategic ageing plan. The Italian penitentiary system is examined through *Rethinking Participatory Design as a political and pluralistic practice: Agonistic coexistence in prison*, which analyses a participatory design initiative within San Vittore prison in central Milan, presenting the facility as emblematic of broader systemic tensions. Similarly, *REVERSELAB. Reclaiming Space and Relations in Prison through Art and Participation: Designing for Dialogue and Coexistence in San Vittore prison* is situated inside the same historic prison, focusing specifically on an abandoned basement ward located in the heart of the city.

In Belgium, *Hearing Materials, Feeling Participation, Caring for Personhood: Situated Lessons from Participatory Design with Non-verbal Participants* is situated within professional care facilities in Brussels, examining dementia and PIMD care through residents’ interactions with their immediate indoor environments.

The Nordic region is addressed in *Encountering, Engaging with, and Nurturing Relations in PD Processes: An Explorative Approach to Relational Work and Reflexivity*, which draws on municipal care settings across Sweden, Denmark, and Finland, including a home care office in Motala, Sweden.

Beyond Europe, several papers engage explicitly with transnational and extra-European settings. *Participatory Design through the Lenses of Women Architects and Designers* adopts a transnational professional perspective, drawing on interviews with practitioners based in Ireland, Italy, France, Scotland, England, and Brazil. The study includes perspectives from Brazil, situating professional trajectories within specific socio-cultural and spatial conditions.

In North America, *Queer, hybrid participatory design: Relational practices and norms for coalition building with rural, LGBTQ+ communities* focuses on the Bear River Region in rural Northern Utah, specifically Cache, Box Elder, and Rich counties, an area marked by geographic isolation and limited access to LGBTQ+-specific services. *Resettlement Work: Accounting for the Invisible Work of Refugee Community Health Workers* is situated in the Commonwealth of Kentucky, and examines refugee resettlement practices in the state's host, noting Kentucky's high per-capita refugee resettlement rates, with specific reference to the Kentucky Office for Refugees in Louisville.

Finally, the Asian context is represented through *Infrastructuring Participatory Scaffolds with People with Profound Intellectual Disabilities in Community Gallery*, which is situated in a community gallery in suburban Japan, within a city of approximately 200,000 inhabitants and characterized by a high concentration of welfare institutions.

Together, these geographically diverse cases explore heterogeneous spatial, institutional, and cultural landscapes, while remaining attentive to the situated conditions that outline different approaches and perspectives on inclusion.

2 Interpretive Categories for Reading Inclusion in Participatory Processes

The papers in the conversation span several research areas, which can be outlined through five interpretive categories that map the content and reflections that emerged. In continuity with the PD tradition, which considers design as a process of negotiation and conflict [6, 31], these categories function as interpretive lenses that enable the papers to be read within the disciplinary debate. We use the term 'interpretive categories' here to indicate conceptual lenses derived from the PD literature; Section 3 then mobilizes these categories empirically across the ten papers.

First, participation can be interpreted as relational and material infrastructuring rather than as an event or method. Within this perspective, originally articulated by Star and Ruhleder [32] and further developed in PD by Karasti [23], Björgvinsson et al. [4], and Dantec and DiSalvo [24], participation is understood as a set of relationships, practices, and material conditions that must be constructed, maintained, and adapted over time. The emphasis shifts from the mere presence of participants to the sustainability of the conditions that make participation possible.

Second, inclusion can be interpreted through care, maintenance, and invisible labour. Feminist and care-oriented conversations in PD have highlighted how participation is sustained by invisible, affective, and relational labor, often less recognized as part of the project, yet essential to its democratic practice [25, 35]. From this perspective, inclusion emerges from everyday practices of attentiveness, maintenance, and shared responsibility. In particular,

the "politics of care" foregrounds a shift from designing objects to co-designing future social relations, rendering ethical-political responsibility a structural dimension of PD.

Third, participation can be interpreted beyond verb-centric and deliberative models. Work influenced by post-humanist, decolonial, and queer perspectives demonstrates how such models can generate exclusion [1, 2, 12, 18, 30]. From this angle, participation may also emerge through bodies, affects, materials, spatial arrangements, temporalities, and more-than-human presences. This reframing is crucial when inclusion is pursued with people whose participation does not conform to dominant communicative norms.

Fourth, inclusion can be interpreted agonistically, that is, through pluralism, dissensus, and the political nature of participation. Agonistic PD treats conflict not as a problem to be resolved, but as a constitutive condition of democratic practice [5, 13, 30, 31, 33]. From this perspective, inclusion does not coincide with consensus, but with the possibility of coexisting dissent and a plurality of irreconcilable positions.

Fifth, inclusion can be interpreted temporally, as something that unfolds through continuity, repetition, and institutional commitment rather than punctual involvement. Temporal lenses in PD challenge extractive and event-oriented approaches and reaffirm the necessity of sustained commitments and distributed responsibility over time [32].

Alongside these five categories, the conversation also foregrounds two cross-cutting concerns. One concerns governance and compromise: inclusion appears as a field of structural tensions that cannot be eliminated, but must instead be rendered visible, discussed, and taken up as the very material of design. Hodson et al. [23] extend this reflection to the processual dimension, highlighting how participation may vary across project phases and how representatives' and institutions' roles concretely shape who is included. Inclusion thus emerges as a matter of governance and accountability.

The other concerns positioning and institutions. On the one hand, there is the re-politicization of the designer's role, understood as a situated and responsible actor whose choices concretely shape who can participate and under what conditions, aligning with critiques of designer neutrality in PD [10, 20]. On the other hand, institutions are understood as design materials, capable of both producing exclusion and sustaining durable inclusive processes, reinforcing a view of PD as a practice that operates within and against institutions [15].

In this dual direction, perspectives on commoning and relational ontology further reformulate the problem of inclusion: rather than merely "giving voice" or "expanding access," inclusion involves producing and sustaining relations that constitute collective subjects and shared capacities for action. Marttila et al. [26] describe the "relational becoming" of the participatory design commoner and show how the participatory designer is implicated in the production of shared subjectivities (the "collective designer") through infrastructuring and affective engagements. In this framing, inclusion also concerns who can become part of the "we" that designs, under what conditions, and with which reciprocal obligations.

Taken together, these interpretive categories articulate the Democracy and Participation: Inclusion conversation in which inclusion is not an objective to be achieved, but a situated, fragile,

and continuously negotiated process. Section 3 expands on these categories and demonstrates how they are applied in the empirical and methodological contexts discussed by the ten contributions.

3 Operationalizing Participation under Constraint: Pluralism, Care, time, and Positioning

Building on the interpretive categories outlined above, this section operationalizes them empirically across the papers in the *Democracy and Participation: Inclusion* conversation. Across diverse empirical sites and experiences, participation is enacted not as an idealized democratic procedure but as a situated practice shaped by conflict, dependency, institutional limits, and unequal capacities to act. Rather than repeating the paper overviews, this section compares them, showing how the conversation advances PD research under constrained conditions.

3.1 Participation, Pluralism, and Conflict: Beyond Consensus

This first strand operationalizes the interpretive category of agonistic participation. The papers explicitly challenge the assumption that democratic participation should aim at agreement, shared understanding, or convergence of interests. Instead, participation is framed as a space where disagreement, contradiction, and irreconcilable positions are not only inevitable but also politically meaningful.

Rethinking Participatory Design as a Political and Pluralistic Practice: Agonistic Coexistence in Prison offers an explicit theoretical articulation of Participatory Design as an agonistic practice. Through the case of a narrative workshop in prison and the work of the “20 Councils,” the authors show how participation can become a space of coexistence in disagreement. Rather than synthesizing or neutralising conflicting voices, the process holds them together as expressions of democratic plurality, in which participation is about sustaining conditions in which dissent can be expressed and recognised as legitimate.

This perspective aligns closely with the empirical findings from *REVERSELAB. Reclaiming Space and Relations in Prison through Art and Participation: Designing for Dialogue and Coexistence in San Vittore prison*. In this project, an artistic approach enables incarcerated people to reappear as political and narrative subjects. Design does not produce consensus or solutions; instead, it opens a space of visibility and testimony that unsettles institutional logics of invisibilization. In both cases, inclusion does not coincide with pacified integration, but with the right to exist publicly, even in conflict.

Together, these contributions engage with agonistic traditions in PD and democratic theory [5, 14, 27, 28], reinforcing an understanding of design as democratic inquiry rather than problem-solving. Participation is understood as a practice that legitimizes dissent and foregrounds the intrinsically political character of designing participation.

3.2 More-than-Verbal Participation and Relational Inclusion

This second strand operationalizes the interpretive category of participation beyond deliberative and verb-centric models. The papers argue that democratic participation cannot be reduced to speech, rational argumentation, or the articulation of preferences. Such models implicitly exclude those whose participation does not conform to dominant communicative norms.

Hearing Materials, Feeling Participation, Caring for Personhood: Situated Lessons from Participatory Design with Nonverbal Participants proposes a reconceptualization of participation through work with people with profound intellectual disabilities and advanced dementia. In this context, participation takes shape through minimal gestures, rhythms, materials, and affective cues. Participation requires continuous interpretive work by caregivers, designers, and institutions. Personhood is not assumed as a precondition but is continually sustained through relational practices.

A related perspective emerges in *Infrastructuring Participatory Scaffolds with People with Profound Intellectual Disabilities in a Community Gallery*, where participation is enabled by scaffolds that precede and accompany action. Here, the mere presence of participants constitutes a contribution, demonstrating that inclusion is a collective, mediated accomplishment rather than an individual capacity.

These reflections resonate with *Participatory Design for Intergenerational Dialogue: How the Voice® Model Can Foster a Longevity Society in the Italian Context*, which posits that intergenerational dialogue is sustained by socio-technical infrastructures that enable reciprocal listening over time. Across these cases, inclusion emerges as a relational approach grounded in interdependence. Methodologically, these papers also demonstrate that research in constrained contexts relies on situated interpretation, distributed sense-making, and the design of conditions for legibility rather than solely on direct elicitation.

3.3 Invisible Labour, Affectivity, and Care as Democratic Infrastructures

This third strand operationalizes the interpretive category of care and invisible labour. A recurring theme across the conversation is the recognition of invisible, affective, and relational labor as foundational to participation. In *Resettlement Work: Accounting for the Invisible Work of Refugee Community Health Workers* Peer makes visible the everyday work of CHWs supporting refugees. Cultural translation, emotional accompaniment, and informal coordination are essential for inclusion, yet they are often overlooked by institutions and in participation metrics.

Complementing this perspective, *Encountering, Engaging with, and Nurturing Relations in PD Processes* examines relational work in early PD phases, introducing concepts such as anticipation work, nurturing work, and relational failure. Participation is described as a fragile process that requires time, attentiveness, and a willingness to engage with breakdown and uncertainty.

Rebuilding Place, Reframing Identity: Participatory visual and environmental tools for intercultural and marginalised communities further demonstrates that participatory placemaking involving young refugees is sustained by trust built over time. Across these

cases, inclusion appears as a practice of care. Democracy is thus reframed as the everyday work of maintenance rather than episodic intervention, echoing care-oriented understandings of infrastructural ethics [14, 28].

3.4 Long Temporalities and Institutional Responsibility

This fourth strand operationalizes the interpretive category of temporality. The papers collectively show that inclusion emerges only through continuity, repetition, and sustained institutional commitments.

Within this perspective, *Participatory Design for Intergenerational Dialogue: How the Voice® Model Can Foster a Longevity Society in the Italian Context* highlights how combining in-person participation, digital tools, and organizational networks enables participants' experiences, particularly those of older adults, to translate into actions, services, and decisions over time. Participation requires and supports continuity, trust, and shared responsibility in reshaping relationships among the various actors involved.

A similar temporal logic appears in *Rebuilding Place, Reframing Identity: Participatory visual and environmental tools for intercultural and marginalised communities*, where participation is approached as a spatial, symbolic, and relational practice that supports long-term reconstruction of belonging in contexts marked by displacement and marginalization. Agency and recognition emerge not through punctual interventions but through durable participatory environments in which visual tools, placemaking practices, and creative activities mediate expression, memory, and collective imagination.

Infrastructuring Participation Scaffolding with People with Profound Intellectual Disabilities in Community Gallery also demonstrates that inclusion depends on slow alignment work among stakeholders, caregivers, material supports, and public-facing formats. Across these contributions, institutions can be considered as ambivalent design materials: they can generate exclusion, yet they are indispensable for sustaining inclusive processes over time. PD thus emerges as a practice that interrogates and reconfigures institutional responsibility, in line with infrastructuring perspectives.

3.5 Positioning, Gender, and the Re-politicization of the Designer's Role

This fifth strand operationalizes the interpretive category of positioning. In *Participatory Design through the Lenses of Women Architects and Designers*, participatory practices are read through gendered experiences and trajectories of professional marginalization, showing how PD functions not merely as a method but an ethical-political stance.

This perspective aligns with feminist approaches to design and PD that challenge assumptions of designer neutrality and emphasize that all design practices are situated, embodied, and entangled with power relations [22, 28]. The designer emerges as a positioned subject whose history, identity, and institutional location directly shape what becomes participable, visible, or legitimate.

This re-politicization of the designer's role also appears across other contributions, where reflexivity, positionality, and responsibility are treated as conditions for inclusion. Designers are not presented as neutral facilitators but as situated actors whose choices, regarding timeframes, formats, languages, and institutional alliances, concretely shape who can participate and under what conditions [21, 35].

3.6 Methodological implications: researching PD in constrained contexts

Across the conversation, a further contribution concerns not only what inclusion means, but how PD research must be conducted when participation is fragile, mediated, or institutionally constrained. The papers suggest at least three methodological implications.

First, research methods must often be adapted from elicitation to attunement: participation may need to be sensed, interpreted, scaffolded, or mediated rather than directly verbalized. This is especially evident in the papers on nonverbal participants, profound intellectual disabilities, and hybrid LGBTQ+ coalition building. Second, constrained contexts require extended commitments and iterative negotiation. Contributions show that field access, trust, and participation are not prerequisites but outcomes of long-term relational work. This is particularly visible in prison, refugee support, care, and placemaking contexts.

Third, methodological reflexivity becomes a substantive democratic issue rather than a procedural appendix. Choices about proxies, formats, timing, institutional partners, and representational practices shape the conditions of inclusion itself. In this sense, the conversation advances PD methodology by considering democratic responsibility as embedded in research and participatory practices, so they cannot be separated.

4 Reflections: Continuing to Operate a Critical Practice

Taken together, the contributions to the *Democracy and Participation: Inclusion* conversation invite an understanding of inclusion not as an attribute to be added to participatory processes, but as a condition that must be actively constructed and sustained over time. Inclusion requires ongoing attention to access thresholds, emotional and material costs, and forms of exclusion that arise even within explicitly democratic initiatives.

From this perspective, Participatory Design is called to engage not only with who participates, but with the models, infrastructures, and institutional arrangements through which participation becomes possible, is sustained, or is interrupted. Inclusion is shown to depend on situated practices of care, mediation, and responsibility, as well as on accepting incompleteness, conflict, and dependency as constitutive dimensions of democratic life.

Continuing to operate PD as a critical practice, therefore, means resisting procedural or instrumental reductions of participation. It involves making visible the material, relational, temporal, and institutional conditions that produce inclusion or exclusion, and acknowledging the compromises that traverse participatory work. Inclusion is not a stable achievement but an ongoing obligation,

one that demands reflexivity, accountability, and collective responsibility.

In this sense, the conversation reaffirms a foundational statement of Participatory Design: participation is always a matter of democracy. At the same time, it extends the debate in the community by arguing that democracy itself must be understood as fragile, situated, and contested, maintained through continuous work that must be reinforced and (re)negotiated over time. What the conversation ultimately makes visible is that inclusion is neither a methodological guarantee nor a final state, but an ongoing democratic achievement sustained through infrastructuring, care, pluralism, and reflexive positioning.

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Queer, Hybrid Participatory Design: Relational Practices and Norms for Coalition Building with Rural, LGBTQ+ Communities

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Abstract

This paper examines the first year of collaboration between the Bear River Region LGBTQ+ Community Coalition and queer residents in rural northern Utah, United States, using a hybrid participatory design (PD) approach. Using Yep's queer relationality theory, we examine how hybrid spaces were designed and iteratively adapted to support inclusion, care, and collective agency among LGBTQ+ community members. Drawing on Community Coalition Action Theory and queer PD, we analyze four cases from May 2024 to June 2025 including workshops and regular meetings to explore how relational practices evolved across different formats and phases of coalition development. In this paper, we articulate how norms, facilitation, and planning were co-created by coalition members, shifting away from productivity-centered hybrid models toward participatory practices. We contribute to PD by advancing queer relationality as both a theoretical and practical framework for designing hybrid interactions that resist normative constraints and center the lived experiences of rural LGBTQ+ communities.

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CCS Concepts

• **Social and professional topics;** • **User characteristics; Sexual Orientation; User characteristics; Geographic characteristics;**

Keywords

Hybrid participatory design, relational, coalition building, LGBTQ+, rural communities, community coalition

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1 INTRODUCTION

A central goal of participatory design (PD) is to build relationships that enable designers to work with communities, challenging dominant norms and narratives to attend to their needs [1]. Queer theory pushes on normative approaches further by recognizing how sexuality and gender shape design, while rejecting linear progress and attending to contradictions in the process [2]. McWilliams defines this as queer PD, where designers challenge the heterosexual matrix, normalize gender diversity, and critique normative approaches

to progress, in favor of alternative models including relational, intimate, and cultural movements [2]. To illustrate how queer PD is operationalized in practice, we draw on our PD process within the Bear River Region LGBTQ+ Community Coalition in northern Utah, United States.

The Bear River Region LGBTQ+ Community Coalition is a collaborative initiative formed to address disparities in health, education, and social support systems that impact LGBTQ+ individuals living in northern Utah. Our purpose is to build capacity for improving community-level protective factors that contribute to LGBTQ+ health equity and well-being. Our PD work addresses regional challenges including geographic isolation and lack of LGBTQ+ specific services in rural communities, with shared issues of marginalization, discrimination, and barriers to services faced by LGBTQ+ residents across this region. Geographic isolation and lack of health services are risk factors that cause health disparities in rural populations, and this issue can compound social stressors and barriers to services for LGBTQ+ individuals as a minority health disparity population [3, 4]. In Utah, religious stigma and anti-LGBTQ+ public policy also contribute to risk factors for poor health outcomes among sexual and gender minorities [3–6].

The Bear River Region LGBTQ+ Community Coalition is a new group working to address these challenges and others through queer PD to create safe spaces, strengthen community systems, and distribute power [2, 7]. The coalition was founded in Spring 2024 by members of a collaborative research team as part of a previous project facilitated by the Transforming Communities Institute (TCI) at Utah State University. The previous project was convened to address a need brought to TCI by a community member concerned about suicide prevention and mental health services for LGBTQ+ youth in a rural community of northern Utah. As part of the project, a needs assessment was conducted and identified priority areas for support in northern Utah including access to LGBTQ+ health services, professional training for LGBTQ+ competency, social supports for LGBTQ+ youth in K-12 schools, and LGBTQ+ community resources [8, 9]. The Bear River Region LGBTQ+ Community Coalition was formed by researchers and community members with the goal to attend to these priorities. The coalition is facilitated by TCI and the Logan Pride Foundation who provided grant-writing, research support, and nonprofit fiscal sponsorship. We build capacity in the community through PD research to assess needs and design and implement solutions.

To make change in the community and include community members who span the large geographic area of northern Utah, the Bear River Region LGBTQ+ Community Coalition holds meetings and design workshops in a hybrid format. This geographic region of Utah includes three counties, including Cache, Box Elder, and Rich which collectively have a population of fewer than 200,000 across roughly 8,000 square miles [8]. Given the wide distribution of residents [8] and the lack of resources for LGBTQ+ populations [3], hybrid PD offers unique potential for our coalition building efforts, providing flexibility, accessibility, safety, and privacy for members [9, 11]. While hybrid PD enables our coalition building, it also presents challenges including relational disconnects between members, unequal participation, and technology limitations [12]. As we have established the Bear River Region LGBTQ+ Community Coalition, we have experienced some of these challenges, but we

have made revisions over time to address them. To do so, we use queer relationality, a theory that defines relationality at the intersection of intimacy (e.g., connection, mutual attunement, and deep understanding) and desire (e.g., wishing, aspiring, needs, affinities) [19]. We argue that intentionally designing and adapting hybrid interactions through the lens of intimacy and desire helps to build supportive norms and practices that center care, inclusivity, and queer ways of being together in PD [2, 15]. This contrasts traditional hybrid meeting models which often reproduce heteronormative practices of productivity and control, such as rigid turn-taking, muting policies, and surveillance concerns [12, 14]. Our work leverages queer theories of design and relationality to frame hybrid PD as a form of relational activism [2, 15].

The Bear River Region LGBTQ+ Community Coalition is the context to explore how queer, hybrid PD acts as a relational space that prioritizes care, play, intimacy, and joy. The purpose of this paper is to share reflections from our hybrid, queer PD process about how our relational practices changed through the initial phase of our coalition building. In this paper we use a reflective case study to answer the research question: how do hybrid relational norms and practices change through our initial coalition building? Our findings show shifts that occurred naturally and intentionally, and reflect on relationality in queer, hybrid PD including norms, facilitation, and planning.

1.1 Positionality Statement

As authors of this paper, we write from within the Bear River Region LGBTQ+ Community Coalition as community members, steering committee members, and research collaborators. Our identities, roles, and lived experiences are integrated with the coalition's work and reflect our commitment to the LGBTQ+ community in northern Utah. We represent a range of lived experiences, including LGBTQ+ individuals, allies, family members, and parents of LGBTQ+ children. All the authors live in northern Utah and bring our unique relationships to the region and its communities into the coalition. We recognize that our positionality shapes how we engage in, interpret, and represent this work. Some of us hold positions of power in the coalition's leadership and facilitation, while others represent community members and organizational partners. While this insider status allows for deep engagement and trust-building, it also requires critical reflection to maintain transparency. We approach this work through a reflexive lens, striving to balance our investment in the coalition's success with a commitment to co-creating knowledge.

2 LITERATURE REVIEW

2.1 Queer Relationality in Participatory Design

PD is heavily grounded in relational practices, which are foundational to justice and activism work [1]. Relationality refers to the structures that shape how people interact with one another [15, 16]. Some scholars define relationality as norms and practices of a community, whereas others argue that it also includes obligations, where members of a community feel a sense of belonging and a responsibility to participate [17]. Theoretically, we situate relationality in a sociocultural lens, which defines social relations not just as the means to an outcome, but as its own outcome of

transformation [16, 18]. Put another way, the relational practices and norms that communities develop are the outcomes of PD.

Theoretically, we use queer relationality when defining relationality in PD, which theorizes relations at the intersection of intimacy and desire [19]. In this theory, intimacy is defined as connection, mutual attunement, and deep understanding, where desire connects to wishes, aspirations, needs, and affinities [15]. In LGBTQ+ communities, relationality is often formed naturally (e.g., chosen families, activist groups) by building on common desires and drive to build intimacy [19]. By prioritizing intimacy and desire, queer relationality involves rejecting heteronormative, linear, productivity-oriented models of collaboration [2], in favor of prioritizing a range of relations such as emotional configurations [21], playfulness [22], educational intimacy [23], politicized trust [24], and more. Intimacy and desire in PD enables trust building and community action, which are especially crucial when working with under resourced communities [20].

2.1.1 Queer Norms. Operationalizing queer relationality requires co-creating relational norms as a community. Norms are not merely agreed upon once but are constantly revisited and developed as the desires of communities change and intimacy grows [31, 49]. There is a paradox of rigidity and fluidity in expectations and norms that allows for queer relationality to manifest. Our rigidity is rooted in solidarity practices, meaning that we do not tolerate behavior that puts our coalition members at risk, whether this risk be physical or psychological [49]. Our fluidity and flexibility in expectations and norms are aligned with our roots in manifesting and practicing queer relationality. For example, systems of intelligibility within queer relationality theorize that there are a multitude of ways of knowing, communicating, and expressing [15]. Systems of intelligibility refer to the formalized language, specified jargon, and other gatekeeping or shaming measures that are meant to create distance for people [15]. Queer relationality posits that there are no specific prerequisites for coming into the space; you do not have to have all the pieces to be in relationship with other people, but expectations regarding safe behavior are upheld. Thus, the fluidity and flexibility in practices and norms encourage exploration and curiosity, especially regarding possible solutions that people imagine for LGBTQ+ health and well-being in rural Utah. Additionally, this flexibility is meant to sustain connection and interaction over time.

2.1.2 Queer Facilitation. Recognizing the need for flexibility, one way that coalition building can do this is through facilitation [31]. Facilitation recognizes our responsibilities and accountabilities to each other in a community [50] and makes space for various forms of belonging and connection [19, 25]. Facilitation is not about having rigid boundaries or structures or merely monitoring and regulating. Rather, it is about embracing the fluidity of relationship and personhood and understanding the complexities and contradictions of lived lives [51]. In coalition building, this can look like distributing facilitator roles and responsibilities. Facilitators act as recognizer and rhythm-setter. As such, leads attune themselves to changing climates and speeds of trust. “Trust is a seed that grows with attention and space. The facilitator can be a gardener, or the sun, or the water” [50]. In other words, the facilitators are not bound by notions of intended productivity or impending deadlines, but are attuned deeply to the moments of desire, intimacy, and curiosity within a space [15, 19].

2.2 Hybrid Format

While PD requires norms and facilitation, hybrid interactions add a level of complexity. The increase in hybrid interactions, or the integration of in-person and virtual participation, has introduced new relational opportunities in coalition building. Hybrid formats offer significant advantages including expanded accessibility for rural or disabled participants, flexibility for changing schedules, and enhanced comfort and safety in settings where some may feel unsafe (e.g., LGBTQ+ people in rural, conservative regions) [7, 9, 11, 30]. Hybrid models of coalition building can support privacy, safety, and access for communities [3].

However, these benefits come with challenges, including relational disconnect between virtual and in-person attendees, increased demands on meeting design, and facilitation difficulties related to turn-taking and power dynamics. Such dynamics often cause virtual attendees to feel excluded from in-person dialogues [27]. Additionally, technical issues, ranging from internet access inequities [28], video conferencing fatigue [29], and risks of surveillance, particularly for vulnerable populations [14], can impact virtual participation. These challenges need to be addressed in ways that align with the values of the community, as these issues can reproduce exclusion, which is especially important for LGBTQ+ communities with histories of exclusion.

Much of the literature on hybrid meetings is positioned in workplace contexts where of productivity, efficiency, and control are prioritized [14]. This approach often reflects heteronormative and ableist assumptions in ways that conflict with queer relationality [2, 30]. For example, in workplace contexts, researchers recommend using de-escalation strategies for animated conversations to manage noise for virtual attendees [12]. Rather than minimizing moments all together, queer relationality can normalize animated relations and build in norms for inclusion, such as pauses to regroup that follow moments of joy [31]. In another example, Ellis and colleagues [2022] highlighted the need for policing sound, minimizing distractions, and monitoring contributions. Through the lens of queer relationality, norms can be co-created that align with the needs of the community, for instance, encouraging taking breaks during meetings, normalizing informal discussions, and recognizing that distractions are a reality for many people [31].

2.2.1 Hybrid Norms. From a queer relational perspective, some norms can be fixed, and others remain intentionally fluid. Fixed norms, like co-viewing set ups that allow in-person and virtual participants to physically see each other, creates a shared presence and sense of belonging [35]. Others may combine fixed and fluid elements. For instance, posting meeting agendas and materials in advance can share expectations and reduce barriers, while still allowing individuals to engage in ways that are meaningful to them [33]. This flexibility allows for a range of ways to interact, including use of the group chat, emojis, a joint agenda, or collaborative or creative technology [30, 34]. Multimodal engagement supports accessibility and joy, aligning with queer relationality by valuing diverse forms of expression and interaction. Norms that appear more standard, like keeping cameras on, can be reimaged to accommodate different ways of being. For instance, sharing elements

of your life (e.g., kids, dogs, food) allows a deeper sense of community and trust building. In this way, hybrid relations can look different for everyone in a way that is equitable and connected.

2.2.2 Hybrid Facilitation. As described above, facilitation is essential for making hybrid dynamics work. One approach is to identify a facilitator who is dedicated to supporting those who are virtual and ensuring they are integrated into the interactions (e.g., offers clarifications, advocates for accommodations, or integrates ideas) [30]. This role moves beyond technical support and toward relational attunement to ensure everyone feels seen, heard, and supported. This aligns with queer relationality, rejecting a singular way of interacting and embracing care and multiple ways of being.

Relational norms and facilitation practices are foundational to how coalitions function, particularly when navigating the complexity of hybrid participation. Centering queer relationality allows hybrid design spaces to be transformative, where intimacy and desire come together. This shift enables coalitions to move from transactional space focused on deliverables to a transformative, relational process that prioritizes trust and care. Turning to coalitions more broadly, we look at how traditional coalition models provide structure and processes to collaborative work but also rely on normative assumptions and institutionalized traditions. Queer relationality challenges and extends these models by prioritizing desire and intimacy as central to coalition building.

2.3 Coalition Building

Coalitions are uniquely positioned to address the complex challenges facing communities by developing cross-sector collaborations for change work within neighborhoods and local systems [36]. As a form of PD, community-based coalitions strengthen the ability of organizations, groups, and individuals to understand community needs, identify shared priorities, and implement strategies for planned action. Coalition-building is often employed as a collaborative approach to public health intervention with the aim to improve community-level factors that support health and well-being [37]. Community-based coalitions also emerge to address equity and justice issues that impact community well-being [37].

Current understandings of how community-based coalitions affect social change are informed by several practice-based frameworks, including the Collective Impact model and Community Coalition Action Theory [37, 39–42]. The Collective Impact model describes “conditions of collective success” for interorganizational collaborations that seek to address social issues, including the importance of developing a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone support [41]. Community Coalition Action Theory is a multi-part framework that identifies key constructs of effective processes for community coalition-building, including defining stages of coalition formation and how factors like community context, leadership, and organizational structures contribute to coalition functioning [39].

Coalition frameworks like the CCAT and the Collective Impact model offer insights into structuring and sustaining collaborative work to address community needs. Recent criticisms of these theories point out a lack of attention to understanding transformative change processes by which community-based coalitions address the

root causes of social issues and promote equity and justice within community systems [43]. When such processes are used, they often assume formalized practices and norms, which can unintentionally silence marginalized groups and uphold the status quo [45, 49]. This is at odds with queer relationality, which resists normative expectations. By grounding coalition building in the context of queer relationality, we extend these models by emphasizing fluidity, emotional attunement, and the iterative process of co-creating norms [15, 19].

To make coalition building more challenging, they often bring together organizations that have their own institutional norms and practices, which can in turn inform those of the coalition [46]. Some coalitions use this as a strategy, up taking existing institutional norms to establish legitimacy [47]. Queer relationality critiques the institutionalization of coalition work that takes up dominant norms, instead of exploring relations that are rooted in community defined practices of care and resistance. This is a tension between the queer epistemologies and the institutional praxis that often sustains coalitions [49]. We build on existing coalition frameworks and adapt them using queer relationality as a framework to reimagine what coalitions looks like, by prioritizing trust, desire, and intimacy over efficiency.

3 METHODS

3.1 Bear Coalition Context

The Bear River Region LGBTQ+ Community Coalition, initially formed in the Transforming Communities Institute, when a local community member who worked with youth was concerned after local LGBTQ+ teens died by suicide. She brought these concerns to a research center to further investigate needs and barriers to supporting LGBTQ+ youth in the area. The study was collaboratively designed through a university-community partnership involving a panel of local organizational partners and community members. Survey research assessed health and social supports available to LGBTQ+ youth and their families in a rural county of northern Utah. In the survey, LGBTQ+ young adults, caregivers of LGBTQ+ youth, and local service providers reported shared concerns about the impacts of bullying, mental health, and family acceptance on housing and food security, safety, and well-being [3]. Participants also identified priority solutions to support LGBTQ+ youth and their families across the region, including improving access to support groups, safe gathering spaces, and gender-affirming healthcare. LGBTQ+ young adult respondents pointed to the level of community knowledge about LGBTQ+ needs as a significant barrier to accessing services, among other barriers.

Based on these needs identified in the survey, the Bear River Region LGBTQ+ Community Coalition formed in May 2024 in collaboration with a Utah State University and Logan Pride Foundation, who led the initial facilitation. Our mission builds from community needs with the goal to,

Improve health equity and holistic well-being for all members of the LGBTQ+ community in northern Utah. Through community education, collaboration, and advocacy, we strive to create a healthier, more inclusive environment where every individual can thrive.

Our work is driven by values of connection, well-being, social justice, empowerment, and perseverance. We take a regional approach to coalition building with the aim to develop diverse partnerships for community-based projects and an inclusive process for community action planning to improve LGBTQ+ well-being across northern Utah.

The coalition launched with a hybrid kick-off workshop that brought together LGBTQ+ individuals and allies from across northern Utah. The kick-off workshop provided an opportunity to share survey findings and identify potential solutions to address needs and challenges. During the kick-off workshop, the group began creating our relational practices, including regular meetings and asynchronous interactions. Following the kick-off workshop, we began holding hybrid meetings twice a month to plan and build community. In the initial formation of the coalition, we have conducted outreach and engagement of new members; defined a mission, vision, and values for the coalition's work; and developed an organizational structure for a steering committee and monthly meetings. These were completed in collaboration with steering committee members, which comprised community members, university researchers, and local Pride center leaders. Membership has followed a process of fluid participation based on capacity and project-based interest alongside development of a group of core members, including steering committee members and general coalition members, engaged with monthly planning and implementation.

Through an iterative process, the development of a coalition structure and planning processes inform implementation of small-scale, community-based projects which were done in collaboration with community members and steering committee members. After initial projects were created, we held a community action planning workshop. This workshop began with a new phase of PD research through the university-community partnership. Through our PD process, university researchers and coalition members co-designed an online survey to assess priority solutions for LGBTQ+ well-being in northern Utah. Survey development took place from January through February 2025 with implementation of the survey in late February through early March. Preliminary survey findings informed the workshop design. The workshop was held in late March and brought together LGBTQ+ individuals, allies, and organizational partners to develop solutions that aim to improve community-level factors for LGBTQ+ well-being in northern Utah. These outcomes as well as previous research and workshop findings will inform development of a three-year community action plan that defines strategies and action steps for collaborative work to improve community conditions.

Through this initial coalition formation stage, our norms and facilitation practices (described in depth below) were both fixed and fluid, but were all co-created with members of the coalition, including community members, university researchers, and local Pride center leaders. Some norms and practices were in formal discussions, but others emerged naturally through interactions as a group. We recognize the value of norms and facilitation practices as a mechanism to mitigate power dynamics. For instance, norms created by community members were weighed equally to those suggested by researchers or steering committee members. Additionally, facilitation was led not only by steering committee members but by members of the general coalition. In workshops and meetings, we

had virtual and in person facilitators who had roles to interact with attendees and connect across the in-person and online spaces. Allowing everyone to facilitate and guide conversations, shifts power; although we recognize even in these moments power dynamics are still at play and can influence dynamics in subtle ways and we acknowledge the range of positionalities we bring to the coalition.

3.2 Data Collection and Analysis

During workshops and meetings, our sources of data include observation notes, shared agendas, and artifacts created (e.g., sticky notes). To answer our research question, how did our hybrid relational norms and practices change through our initial coalition building, we conducted a reflective case study [53] to document the context of the coalition and reflect on how our relational norms and practices over an initial year of coalition building. Reflective case studies provide context to a situation, evidence of how interactions took place, and insights about the overall issue [54]. Within this analytic approach, we analyzed our queer, hybrid PD through the lens of queer relationality. We collaboratively reconstructed narratives about our cases to identify norms and practices that align or conflicted with queer relationality to emphasize reflexivity throughout our process [15]. Reflexivity invites ongoing critical reflection centered on the experiences of coalition members and our values of connection and well-being [52].

We present four cases, including the kickoff and community action planning workshops and the format of the initial and revised coalition meetings. The four cases were intentionally bound to highlight the two formats where we interacted as a coalition: (1) workshops, which were significant moments where the coalition came together as a community, which were planned and facilitated by members of the coalition and (2) regular coalition meetings, one from summer 2024 and one summer 2025 to represent the more frequent relational norms and practices in our coalition. We share how our community collectively shaped relational practices formally and organically and compare how they changed over time. Collectively, we find that the reflective case study approach yielded insights into how norms and facilitation practices changed over time in intentional and fluid ways. Additionally, it afforded us the opportunity to reflect on how queer relationality informed how we developed norms, addressed challenges, and prioritized desire and intimacy within our community. Below we define each case, document the norms and facilitation practices, and reflect on how queer relationality was present in these cases. In the discussion we look across cases to reflect on our changes over time.

4 RESULTS

4.1 Case 1: Coalition Kick-Off Workshop (Spring 2024)

The kickoff workshop introduced the Bear River Region LGBTQ+ Community Coalition and set the tone for our relational practices. The workshop plan and the hybrid interactions were co-designed with the emerging coalition steering committee, university researchers, and members of the local Pride center. The structure of the workshop involved reflecting on survey findings, brainstorming solutions, and co-designing an initial vision for the coalition. To do so, we ran a series of small group discussions in parallel. In-person



Figure 1: Welcome table for in-person attendees.

groups worked on their own to generate ideas and notes using sticky notes to allow for multiple methods of documenting ideas and reflections. Virtual groups engaged in discussion with hybrid facilitators. While the activities were not identical, they focused on the same topic, allowing for participatory input, which was followed by whole group sharing to bring ideas together.

Norms were fixed and established before the kick-off workshop by coalition members to ensure ease of connections and accessibility. For instance, we shared group norms about shared dreaming and using curiosity as a way to imagine how we might attend to needs in the community. Another fixed norm that was communicated was framing the need to use the microphone in the physical space as an accessibility measure, to ensure that both virtual and in-person attendees could hear discussions and questions. For online participants, a norm was established to contribute through the chat or by using the raise hand feature and unmute to share with the full group. While we tried to encourage discussion between virtual and in-person attendees, virtual attendees used the chat and only unmuted to talk as a small group. No one shared with the whole group; instead, a hybrid facilitator asked questions or raised points by reading the chat aloud to connect conversations and ideas.

We identified in person and virtual facilitator roles who were researchers and community members. However, in this workshop, we had not discussed in depth how the roles would interact. The in-person facilitators welcomed attendees as they came (Figure 1), and the hybrid facilitators did the same, welcoming the virtual attendees in the chat. This was critical to make sure both in person and virtual attendees were included and felt welcomed at the beginning of the workshop. However, we recognize that the in-person

welcome was a much warmer welcome with pride flags and information, compared to a text welcome in a chat. Additionally, at this welcoming point, virtual attendees could see the slides which the lead facilitator was sharing but could not see people in the room due to technological limitations in the space, making co-viewing not possible which restricted the community's ability to connect and be seen. However, while the in-person group was not viewable, the hybrid facilitators had their videos on to help create a sense of presence. Before beginning, in-person attendees shared food and engaged in conversation and introductions; at this point, there were some minimal chat conversations among virtual attendees.

The kickoff meeting was effective at identifying initial directions for coalition building and highlighted the importance of facilitation roles and norms to support inclusion and accessibility. It also revealed opportunities to improve hybrid relationality. While there was some planning about the hybrid interactions, there was little interaction across spaces and no alignment between the activities. Our relational practices were grounded in intimacy, creating a safe space and prompting interactions; however, it was not always effective as there was minimal interaction from online participants.

4.2 Case 2: Community Action Planning Workshop (Spring 2025)

The second public workshop we ran as a coalition was focused on validating and refining solutions. Coalition members again designed the workshop to be hybrid, building on what we learned in the first workshop. The workshop was structured with a welcome, data walk, and small group solution building development, followed by an in-person lunch and a virtual debrief. Activities

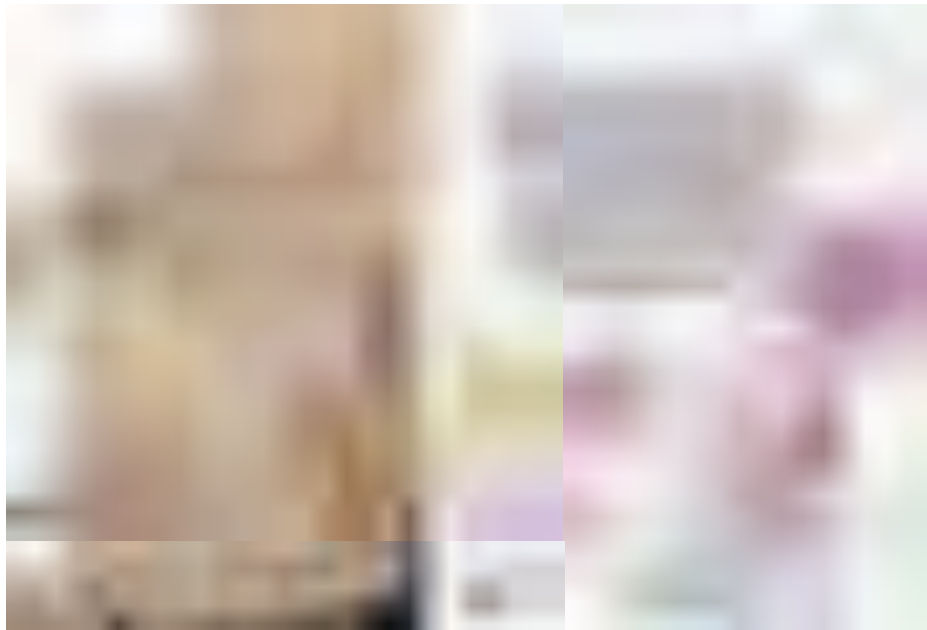


Figure 2: In-person attendees generated sticky notes on posters in a data walk (left). Virtual attendees generated digital sticky notes on a digital data walk in Miro (right).

in this workshop were designed to be the same for in person and remote attendees to improve hybrid equity. In-person attendees reviewed data posters hung around the room and used sticky notes to generate ideas (Figure 2, left); virtual attendees used a digital sticky note application, Miro, to review the data walk posters and generate ideas (Figure 2, right). This enabled virtual attendees to contribute in multiple ways of engagement that mirrored in-person interactions while opening options to increase accessibility.

The intention was to integrate sticky notes and ideas and discuss across in-person and hybrid attendees. However, due to unexpected technical difficulties in the physical room this was not possible. The room we held the workshop in had a full audio and video setup; however, even after tests and working with facilities to fix problems, full hybrid interactions were prevented by imperfectly functioning audio. Virtual and in-person attendees did not engage in dialogue; this separation reinforced a divide in experience and presence between the two formats. However, virtual and in-person attendees were able to co-view each other, creating a stronger sense of community across formats despite the lack of audio (Figure 3). Flexible options for signaling interactions among attendees, both in person and virtual, were created, such as raising hand, chat, and emojis, but the virtual attendees discussed openly throughout, since virtual audio was not heard by possible in-person participants. While the plan was to integrate ideas, we essentially ran two parallel in person and virtual activities.

Norms were established by coalition members before the workshop. For instance, attendees were encouraged to engage in dreaming and imagining when it came to developing solutions for the LGBTQ+ community in northern Utah. Attendees were also encouraged to come as they were and interact how they were comfortable, giving space to move, share stories, and engage how they wanted

and were able. In the Spring of 2025, there were political shifts in the United States that directly impacted LGBTQ+ communities. To attend to these shifts, norms were also included about safety, for instance, not sharing identifiable information in stories or the option to remove names from Zoom to protect individuals' identities. Workshop attendees were also encouraged to be supportive and acknowledge the heaviness of the topics and prioritize their well-being over providing ideas or contributing in a specific way. This was fluid and welcome to look however that needed to for everyone but provided examples like pausing or changing conversations, taking breaks, or having unrelated joyful conversations to combat the heaviness.

To support these norms, all groups had a coalition member facilitator present, which was new from the previous workshop. Facilitators used data from the survey and a set of predefined discussion questions to guide the conversations and create a safe space to share. While facilitator roles were less clear in the first workshop, in this workshop we were explicit about possible interactions – facilitators ask follow-up questions, connect, share, or add to ideas, and giving space to pause. We also set expectations about how the in-person and hybrid facilitator would interact, encouraging un-muting and sharing in the chat or allowed to ensure connection between in-person and virtual contributions. This approach was intended to set a relational norm to encourage interruptions and pauses and, in doing so, to integrate ideas fluidly across modalities.

Like the kick-off workshop, attendees were welcomed as they joined the workshop. In this workshop, virtual attendees were not simply welcomed via the chat but were welcomed verbally by a hybrid facilitator. While some attendees responded through the chat, it prompted attendees to turn on their cameras and unmute to introduce each other, creating a warm and visible presence for



Figure 3: In person attendees in a large room, showing a screen that has slides and images of virtual participants, allowing attendees to co-view each other.

virtual attendees. This change in welcome also facilitated more conversation before the workshop began, allowing attendees to start building connections and community.

While we still had technology limitations which separated attendees and limited opportunities for collaboration and sharing, our queer relational practices were more intentional in this second workshop. Changes to create more conversation and initial warmth and care for both in-person and virtual attendees was effective to spark more conversation early in the workshop. In this workshop, our norms were similar to the first but included a new focus on safety. Some safety norms were fixed, for instance not disclosing identifiable information. Others were fluid, like norms to combat the heaviness of the moment through joy and breaks.

4.3 Case 3: Initial Coalition Meeting Format (Summer 2024)

Following the kick-off workshop, we began meeting as a coalition, representing the shift from one-time engagement to ongoing relational work. Since the coalition was still in formation stages, norms and facilitation practices were still in early stages as well. Some norms were created, through recommendations by coalition members. For instance, meetings were opened with popcorn style introductions, inviting virtual and in person attendees to introduce themselves, including their name, pronouns, and roles or community affiliations. The popcorn style helped to connect in person and virtual attendees as we would bounce between formats. To begin each meeting, the coalition mission was read aloud to center the meeting's purpose, grounding participation in shared values.

In meetings, there were regularly fewer virtual participants, creating an uneven power dynamic. While some in-person members joined Zoom, there was no practice of mutual visibility between in-person and virtual spaces as co-viewing was not an option in our community space. Most online contributions occurred via chat, but with no hybrid facilitator clearly identified, so chat contributions were only integrated too late into conversations resulting in uneven participation.

Beyond the hybrid facilitation, coalition meetings did not have clearly distributed facilitation roles. A single facilitator, who was a university researcher and a member of the steering committee, often handled most aspects of the session including guiding the agenda and managing both in-person and online interactions. Agendas for the meeting were structured with topics generated by the steering committee, one of whom was also facilitating meetings, placing a disproportionate burden on the facilitator and reinforcing hierarchical power dynamics. In these early coalition meetings, the group was still creating the norms and facilitation practices. Therefore, we saw some reproduction of university research norms and practices. Which is unsurprising as coalitions often take up dominant norms of organizations, they are part of. However, this left room to integrate queer relationality into the meeting organization.

4.4 Case 4: Revised Coalition Meeting Format (Summer 2025)

A year into regular meetings, the coalition had grown in relational depth, including strengthened norms and more fluid and distributed

facilitation. Similar to early norms, the coalition continued the popcorn style introductions and reading of the mission. This anchoring practice had become a community norm, providing continuity across meetings. Additionally, the agenda began with open space for people to share events, resources, community or personal news, community needs, and other random topics. This norm emerged over time as coalition members often started meetings by sharing informally and created a tone of openness and encouraging community building. A shift in the meetings that emerged organically was the shift to co-viewing as a norm. Most in-person attendees brought laptops and joined online to participate directly including facial expressions, emojis, and notes in the chat. Virtual attendees were shared on a screen in a new community space to make virtual attendees visible to everyone regardless of if someone had a computer or not. This created a hybrid space where visibility, signaling, and participation were more fluid and equitable. Participants in both the online and in-person format engaged with each other using a variety of signaling methods: chat, emojis, facial expressions, unmuting, or raising hands. The diversity of expression prioritized joy and care in our meetings.

Facilitation also shifted to be shared across roles, with different coalition members leading various sections of the agenda. Members of the steering committee co-created the agenda in advance, different members led sections of the meeting, and the secretary organized and shared back ideas and questions. This change came from the group reflecting that one person was leading, which was both an inequitable workload for that person but also did not create a collaborative environment. Many people took turns supporting hybrid facilitation tasks, from sharing materials to monitoring the chat and encouraging online voices. This distributed model fostered a greater sense of ownership and participation, compared to early meetings where this facilitation remained on one or a small number of individuals. Another notable shift was the hybrid relations around emotions and play. Given political transitions in the United States and major policy changes at the state level that directly impacted our LGBTQ+ community, we often detoured from the agenda and focused on topics that were relevant to community members. Moments of big emotions, both positive and negative, were not dismissed but rather followed by moments of reflection and pause to re-engage as a group. Interactions between in-person and virtual attendees also became less formal and included more humor and play; for instance, virtual attendees often have kids join or come in and out of the video frame. Rather than expecting everyone to always be fully present and productive, they are given grace to come and go and often in-person attendees will engage kids during meetings, adding moments of play. This reinforced queer relational practices and created stronger engagement between online and in-person coalition members.

The meetings in the spring of 2025 reflected a maturity in our queer relationality. Facilitation roles were less rigid and were collectively held, resulting in a stronger, adaptable structure. The practices of co-creating structure, pausing to check in with online members, and of leaving room for play and presence had become second nature, evidence of queer relationality at work in our design space. However, this does not mean that we always get relational norms correct. There are always adaptations we can make to improve our practices. For instance, in a recent meeting, a suggestion

was made to add evolving hybrid norms in the agenda so that they can regularly be reviewed and to make them transparent for new attendees. These may not be rigid norms, but rather principles that underscore our relational practices.

5 DISCUSSION

In this paper, we explore the hybrid PD practices grounded in queer relationality that shaped the formation of the Bear River Region LGBTQ+ Community Coalition. Through a reflective case study design spanning the coalition's first year, we discuss how relational norms and facilitation practices were designed and adapted to support hybrid interactions. Across these four cases, our relational practices evolved and took on new forms, some of which were intentionally changed and others that emerged naturally. Workshops were more formal and structured, given their larger scale and limited time for our design goals, whereas regular meetings were more flexible. Across both formats, roles shifted from formal to fluid, and accessibility practices toward more collectively held and flexible norms. This trajectory of changes across formats reflected our embrace of queer relationality – valuing presence over productivity, fluid over rigid norms, and joy over order.

Our work shows that our coalition aligned challenges of coalition building where they take up the norms and practices of the organizations that are represented within them. For instance, in our initial workshop and meetings, we had more fixed, top-down structures [45, 49]. However, over time we were able to embed queer relational practices that prioritize desire and intimacy [19]. Traditionally, hybrid relations are built around productivity, control, and surveillance [12, 14], yet our coalition embraced queer, hybrid PD as a site for queer relational practices that normalize difference, pause, and play [2, 15, 22].

Our relationality was not achieved through rigid enforcement of norms, but through iterative co-creation that prioritized safety, access, and joy. This is particularly important in queer spaces, given privacy and safety concerns, especially in rural, conservative areas. Across our cases, we reflect on our relationality in hybrid PD, including norms, facilitation, and planning. Below we share recommendations for how others might leverage hybridity in similar coalition-building PD spaces.

5.1 Reflections on Relationality in Queer, Hybrid PD

5.1.1 Norms. Norms in PD allow for explicit and implicit expectations and practices that can help ground communities and increase effectiveness [37]. Our co-created expectations and norms were iteratively developed, meaning they represent not individual moments of agreement but instead a fluid reflection of the constantly changing needs and desires of communities [31, 48]. Flexible relational norms in communities that have historically faced harm are beneficial in many ways, including providing space that reinforces privacy, safety, and trust [7, 11, 24]. This does not mean our coalition building is not structured. Instead, it reflects queer relationality, including flexibility and accountability. In the early stages of our coalition building, norms were more explicit and often focused on accessibility, for instance enforcing the use of a microphone in a workshop to ensure discussions are heard by all

attendees. Our later fixed norms resolved more around safety to prioritize the well-being of attendees.

While some norms were explicit, as the coalition matured, other norms naturally emerged and were integrated into practice and reinforced through community participation, rather than formal instruction. For instance, in early coalition meetings, in-person attendees could see virtual attendees, but as the meeting went on, more in-person attendees would join the online meeting to engage in co-viewing. This allowed space to engage in multiple ways of being (e.g., with kids or sharing food), but also to distribute the load of facilitating interactions between attendees in different spaces. Norms and how they adapt over time address power dynamics where members feel agency to inform how everyone can participate [7] but also align with scholarship on relationality where norms are not fixed yet still shape how people interact [17].

5.1.2 Facilitation One mechanism for members to recognize responsibilities and create space for multiple forms of belonging and connection is through facilitation [19, 25]. Facilitation is not about having rigid boundaries or regulating relations, but instead creates relations supporting complexity, contradictions, and moments of intimacy and curiosity [19, 50]. Facilitation is not a simple practice, and emerged as both a point of tension and transformation in our coalition's hybrid PD. Facilitation evolved across meetings and workshops: in initial meetings we relied heavily on lead facilitators but transitioned to a model of distributed facilitation as our community grew over time, enabling attendees to take on roles that distributed workload and supported hybrid relationality. In this way, facilitation was reimagined as a shared practice which aligns with relational theories of leadership and queer coalition building, where authority is decentralized [49, 50]. In workshops, this looked different; facilitation was more structured to ensure progress and collaboration among an inherently more challenging larger group of participants and within a certain timeframe. While progress is a goal, we still prioritize care, inclusivity, and joy while working toward change making [15], which distinguishes our approach from heteronormative norms of productive and control approaches regarding hybridity in more corporate settings [12, 14]. For instance, the workshops all had space for networking, sharing food, caregiving support, and breaks.

5.1.3 Planning. In our coalition, planning was not a top-down or linear process, but rather a relational practice [2, 12, 16]. Planning was a process where relational norms and queer values were leveraged through intentional design of hybrid interactions and distributed responsibility. For example, roles such as drafting agendas initially fell on the shoulders of one member of the coalition, but as our coalition developed, it was taken up by different members of the steering committee, reflecting our commitment to shared labor and non-hierarchical structure. Agendas themselves became relational tools, used not only to organize tasks, but also to signal hybrid norms, outline multiple modes of participation (e.g., chat, video, emojis, silence), and invite collective input. Rather than striving for seamless execution, we planned with an expectation of messiness and disruption, seeing those moments as opportunities for reflection and adaptation. For instance, even with intentional planning and follow up, the technology did not function as expected in either of our workshops. We recognize that even with the best of planning, challenges in hybrid technology rarely fail to arise.

While there is always frustration when things do not function as expected, we approached these moments with care and joy and remained flexible, making real-time adaptations. Importantly, our view of technology as a relational practice changed over time. In our first workshop, we used technology as a way to be in relation with each other, but in our second workshop, we expanded this so that virtual and in-person activities mirrored each other. This allowed for an equitable experience across in-person and virtual attendees.

6 CONCLUSION

Over the first year of the Bear River Region LGBTQ+ Community Coalition, our hybrid PD practices reflected our commitment and improvement to queer relationality, grounded in care, flexibility, and collective agency. In this paper, we reflect on the changes of our norms, facilitation, and planning on our workshops and coalition meetings to improve our relational practices and attend to community needs. Our reflexivity, a critical component of queer relationality [15] highlights the successes, challenges, and adaptations we made to support our coalition building, allowing others to learn from these practices and adapt them for their PD or coalition building.

Our paper contributes to the PD literature by leveraging queer relationality as a theoretical orientation and a practical lens for designing and adapting queer, hybrid interactions. By positioning hybrid meetings as spaces of critical design, our work resists normative framings that equate hybrid participation with productivity. Instead, we advocate for hybrid PD as a space to reimagine how we gather, how we relate, and how we build together across geographic, political, and social spaces.

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Encountering, Engaging with and Nurturing Relations in PD Processes - An Explorative Approach to Relational Work and Reflexivity

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Abstract

This paper investigates the characteristics of relational work in Participatory Design (PD) practices. Through three cases, we discuss how researchers encounter, engage with and nurture relations during the early, often fragile stages of PD processes. We build on existing research on relationality in PD literature, and draw on empirical material to develop an approach for depicting and describing relational work. We situate our analysis in municipal care context and aim to identify and present various forms of relational work and reflexivity. We reflect on how relationships emerge, unfold, and evolve throughout these processes. Our contribution is twofold. First, we present an approach to analysing PD projects through a relational lens, grounded in empirical cases. We propose an extension of relational language, to understand relationality through various dimensions of relational work and reflexivity drawing upon existing PD literature. Secondly, we explore how relational approaches may be advanced in a more practice-oriented way. We propose an explorative lens that allows researchers to expose, and familiarise themselves with, relational aspects of PD processes.

CCS Concepts

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

Keywords

Relationality, Relational work, Relations, Participatory design, Early-stage PD

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1 INTRODUCTION

Relations are ubiquitous and intertwined with everyday life: at the workplace, during leisure activities, in research and in Participatory Design (PD) processes. Relationality and our relations may be said to define us, and as humans and other-than-humans [16, 19]. However, although relational aspects are important in PD [20, 38], providing applied accounts of relationality in PD are less emphasised.

This paper presents and analyses three PD cases from a relational perspective. Although a myriad of relations exists among various project participants, stakeholders and other actors, this paper explores relations from the researcher's perspective. We focus on discovering and understanding practice-based accounts of working with relations, looking at relations between researchers and various constellations of participants. We make visible the complexities of relational work as we lived and experienced it through a narrative approach [3] to care-related PD projects in the public sector.

Until recently, the PD literature has not discussed in depth what constitutes relational work in practice [47]. Current literature also emphasises various attitudes to working with relations. On the one hand, relational work is portrayed as active, outcome-driven work, with relations as a malleable design material, influenced by the researchers' professional agency [14]. On the other hand, relational work is also portrayed as an approach in which working with relations is affective, emergent and fluid, and through which the designer attunes to, and co-becomes with relations [2]. In our work, we acknowledge the co-existence of these approaches. We contribute to the existing body of knowledge by providing examples and elaborating on what it means to apply both approaches simultaneously.

When we review the PD literature, we also observe significantly less coverage of the early stages of PD projects [20, 22]. In contrast, there is a considerable body of work that addresses aspects of concluded PD projects and post-project perspectives, for example, design-after-design [8, 12]. Scholars have noted that providing accounts of concluded projects is often simpler than reflecting on ongoing projects situated in the here and now [42].

This paper builds on existing scholarship concerning the notion of relationality, and how the PD literature has discussed relations. Here, we draw primarily on Akama's and Light's work [2, 5, 31, 32], where they introduce 'relational sensitivity' and affective dimensions of relationality, and Dindler and Iversen's conceptualisation of 'relational expertise' [14].

Based on existing literature about relationality in design, and our empirical cases, we develop an approach that depicts the nature of

relational work. We also discuss how PD scholars and practitioners can attune to relational reflexivity in practice.

In particular, this paper identifies and describes how relations emerge, unfold, and evolve, how they are materially manifested, and what type of work is required to scaffold, sustain and nurture relations. Thus, this paper contributes an explorative analysis through a relational lens, unpacks various aspects of PD processes, a conceptualisation of what it takes to work relationally in PD by bringing together key theoretical underpinnings, and identifies further opportunities for research on relationality in PD.

2 POSITIONING RELATIONALITY IN PD

In this chapter, we foreground the notion of relationality in PD by presenting selected research, and discussing the concepts of relation, relational work and relational reflexivity. The concept of relationality and relational ontologies originates in relational sociology [16], and is directed at averting traditional dichotomies of body–mind, human–nature, and shifting the focus to co-becoming and co-constitution [38]. This theorising has resonated with design research, and scholars are increasingly exploring relational ontologies in their work [3, 6, 17, 26, 26, 41]. Although relations and relational dynamics are fundamental to collaborative processes, PD often addresses them only implicitly. To make these dynamics more explicit, we extend the existing terminology in the PD literature (e.g. relational work [14], relational expertise [14], invisible designing [47], relational sensitivity [2, 5] and relational practice [1]). This extension enables us to combine and compare these theoretical, conceptual insights with our accounts of three PD cases. In the following pages, we examine how PD has applied relations and relational ontology, which establishes the theoretical foundation of our paper.

2.1 Relations and Relational Work

Scandinavian PD has its roots in collaborative practices between researchers and union representatives during the 1970s [9], which required forming working relationships among them [10]. Since then, researchers have worked to establish close relationships with project participants [13, 30, 33, 36], by investigating changing roles [44], establishing trust [48], working with communities [23] and demonstrating commitment [15, 18, 28].

Many earlier works do not explicitly discuss relations [14], and relations often remain in the background. However, some recent scholars focus on relationality in PD, including Yee et al., who state ‘We understand all participatory design as relational, due to PD’s focus on social relationships to enable change making’ [47, p. 67]. Moreover, contemporary decolonial PD foregrounds relations as a central aspect of PD, and argues that PD can be design-as-relationship-building [46]. This emerging focus reflects PD’s growing acknowledgement that relations are fundamental to collaborative processes.

PD has examined relations through various lenses. For example, Le Dantec and Fox [30] conceptualise relations in community PD as emerging from both geographic proximity and social relations, and encompassing both research-based and personal relations. Relations have also been explicitly conceptualised and defined through an other-than-human lens, to emphasise the intertwined nature of

humans, other species and computer systems [40]. Light and Akama situate relations in the politics of care [32, 39]. Through this lens, they conceptualise relations among researchers, colleagues, peers, artefacts and things, which creates opportunities for new ways of being and co-becoming through relations. Their work highlights the fluidity and interdependence of relational encounters and they argue for emphasising the ‘human touch’ and ‘micro-dynamics’ in PD practices [31]. In particular, when it comes to facilitating collaborative activities, they emphasise the importance of embodied ways of knowing that foster an awareness of thoughts, sensations and values [5]. This includes navigating emotions and responding to group dynamics that shift subtly with changing settings. Similarly, Akama explores socio-material collectives, and questions the distinctions between designer, researcher and user, as these roles are continuously assembled through ‘matters of concern’ [7]. According to Akama, ‘co-designing is performed and emerges from relational sensitivity’ [2, p. 262]. They frame relational work as an embodied, ethical and situated practice in which social relations are experienced through the senses and affected by emotions.

Marttila et al.’s recent work builds on the foregoing perspectives [34], and reflects on ways of relating and establishing relations at the intersection of designing and commoning. To advance relational approaches in PD, they suggest design principles that support the emergence and ‘becoming of a participatory commoner’, including fostering critical self-awareness, valuing mutual engagement, self-reflection and sharing outcomes, in the spirit of reciprocity [34].

Dindler and Iversen offer an alternative perspective to relations in PD, and work explicitly with relations as a central part of PD practices [14]. They emphasise that relationships between humans may be approached as malleable objects of design. Their work emphasises the need for PD practitioners to develop skills that extend beyond technical expertise, and instead focus on cultivating relationships and collaborative environments. Thus, Dindler and Iversen define ‘relational expertise’ as a core skill in PD, work consciously in collaborative engagements with stakeholders, and draw on the ‘researcher’s professional agency’ to establish and transform professional relationships [14].

Agid provides a different perspective on relations, and calls for a critical examination of the relationships, reflexivity and power dynamics inherent to PD [1]. They encourage designers to reconsider their roles, not as neutral facilitators, but as active participants who shape the relations and infrastructures they co-create, and introduce a framework of ‘relational practice’. This concept is defined by enabling the creation of embodied and collective knowing that supports underlying relationships as the foundation of meaningful work [1].

In this paper, we build on these seemingly contradictory, yet complementary perspectives. We acknowledge the importance of paying attention to consciously scaffolding relations based on professional agency, in line with Dindler and Iversen’s work [14], however, keeping in mind that relations emerge and are unpredictable, and require participants to attune to them, and contribute to creating collective knowing, as Agid, Light and Akama established [1, 31, 32].

Whereas earlier scholars established relational approaches in PD, more empirical and practice-based accounts are still warranted. Specifically, we argue that the PD community could benefit from

insights into how relations in PD processes are established and nurtured, and how designers work with these relations in practice, to establish a depth and contextual understanding of relational design and its practical implications.

2.2 Relational Reflexivity

Akama explores relationality, and foregrounds the importance of attuning to what is happening within oneself and with group dynamics [5, 24]. They introduce the Japanese concept of *Ma* – awakening to the in-between-ness, to conceptualise ‘relational sensitivity’ as something ‘visceral, intuited, intimate, and felt’ [2, p. 266] – the readiness to attune to emergent and contingent collaborative dynamics of a situation. This attunement may help to navigate a design process and act responsibly in it [2, 5]. Akama and Light [5] develop the notion of ‘relational sensitivity’ through the metaphors of ‘poise’ and ‘punctuation’ to discuss how designers attune themselves to PD’s complex, emergent and affective dynamics. Here, ‘poise’ refers to the designer’s presence and readying for the design situation, whereas ‘punctuation’ refers to navigating relational dynamics, meaning relinquishing control and submitting to responsive and situated practices that call for sensitivity to timing, context and affect. Akama et al. have recently addressed reflexivity and relational dynamics concerning hierarchy by asking, ‘how do we respond to feelings that emerge as part of the relations, yet shift so silently in and through our bodies’ [3, p. 60]. They highlight the richness of posture and body language, especially when addressing unspoken hierarchies, and that enabling voice does not always need to be conveyed vocally.

Gottlieb addresses the notion of ‘relational sensitivity’, and applies ‘poise’ and ‘punctuation’ in practice [20, 21]. Gottlieb draws on Akama and Light’s work [5] to explore how one may affect the initial stages of PD work, through ‘poise’ and ‘punctuation’ [20]. Gottlieb also outlines a vocabulary and framework to discuss the skills needed by PD practitioners. These include sensitivity to self as embodied awareness, sensitivity to intersubjectivity as awareness to various intersubjective dynamics, and sensitivity to materiality and the process as roles of the body, posture and clothes, and materials and artefacts used [21].

Another aspect of the intricate process of working with reflexivity in relational PD may be referred to as ‘invisible designing’ [47], which builds on attuning to relational dynamics, self-awareness and ‘practices of readiness’ [5]. Yee et al. argue that PD’s collaborative and relational processes of initiating, sustaining and maintaining relationships with small gestures and invisible acts, require affective and emotional labour, hence are inherently interdependent [47].

Simonsen and Jensen underscore the importance of working with relational dynamics in PD processes, and identify a genuine focused presence in interactions, yet without deeper reflection on nuances of different relations. Pihkala and Karasti frame the reflexive engagement as the sensibility to attending to intentions, power and accountabilities in PD. Furthermore, they argue that reflexivity is directed at relationships in the field, as well as self-reflexivity. We can trace similar approaches in Akama, Hagen and Whaanga-Schollum’s [4] and Gottlieb’s [21] work, where they stress

the importance of a critical awareness of positionality, background and bias.

Our understanding of ‘Relational reflexivity’ draws on Akama’s work on a practitioner’s readiness to attune to themselves and to a situation’s emergent and contingent collaborative dynamics [2]. We also consider Gottlieb’s contribution of sensitivity to materiality and the process [21]. Our articulation of relational reflexivity puts an additional emphasis on Pihkala’s and Karasti’s reflexive engagement, defined as reflexivity throughout an emergent situation [37]. Relational reflexivity also conveys an emphasis on researchers’ acknowledging their positionality, bias and background, especially in relation to others [37, 47]. Although we acknowledge that relational reflexivity is an intertwined part of PD, this warrants empirical accounts of how this manifests in practice and how they are entangled in various kinds of relational work in PD.

3 RESEARCH APPROACH AND ANALYTICAL FRAMEWORK

In this paper, we employ trio-ethnographic reflection [43] to explore the notions of relationality in our practice and from our experiences as PD researchers. Our research combines reflexivity [45] and a narrative-inspired method [2] to explore, name and collaboratively write relational episodes of our PD engagements.

All three of our cases are situated in a Nordic care setting, and our analysis focuses on the early stages of these projects. Case 1 is situated in a small, Swedish, municipal home-care organisation that applies area-based approach. Case 2 is situated in a Danish municipal care facility, and explores collaborative care practices. Case 3 discusses the design of early childcare and education in a Finnish municipality. Cases 2 and 3 are concluded projects, whereas case 1 is ongoing. To select the cases, we selected three criteria: the project has an element of co-design, the project is carried out in a municipal setting, and revolves around care. We also considered the availability of project documentation and our ability to re-attune to subjective, first-hand recollection of each case. In all three cases, all the participants signed consent forms that outlined the use of their data, stored and managed in accordance with national and institutional regulations at the time of the projects.

The collective exploration and analysis of our empirical material unfolded through five key stages (see Figure 1).

During the first stage, we discussed the diverse types of relations and relational work we encountered in our three PD cases. We shared stories of encounters with participants, colleagues, contact persons, and so on, to jointly discuss the patterns, similarities and differences of our experiences. In keeping with Howell et al. [27], we let ‘first-hand experiences become the starting point for new insights, and treated our subjectivity and emotions as central to the research’ (p. 42).

During the second stage, we mapped the existing literature on relationality in PD and Design research, which included identifying existing themes and concepts.

During the third stage, we created timelines of the three PD processes. Together with our recollection of the archival material, the timelines were used to retrospectively [46] recall the processual evolution in cases 2 and 3, and emergent [46] from the ongoing case 1. The analysis of the three timelines was used to retrace, represent



Figure 1: Illustration of the processes of exploration and data analysis

and share experiences from the cases, and was inspired by Karasti et al. [29]. We went through our personal archives of images, presentations, emails, calendars, printed material and reflections, to recall additional relational details of each case.

During the fourth stage, we discussed the examples together, and established three themes that illustrated and captured our experiences. The first theme, *relational work*, described the type of practice applied. The second theme, *relations*, referred to various participants, stakeholders and constellations with which we established relations. The third theme, *relational reflexivity*, references methods, tactics and approaches developed to attune to ourselves, others and the situations. The themes emerged through theoretical and conceptual frameworks from the literature, including *social relations* [32], *relational expertise* [14], *relational practice* [1], *relational sensitivity* [2, 20, 21, 31] and *reflexive engagement* [37] (see Chapter 2) and from our own discussions and reflections concerning relationality and PD in the preceding phases. We selected the moments that depicted similar aspects of relational work from our cases (e.g. dealing with past relations, handling new encounters, initiating relations and aspects that illustrate emotional labour), yet they depicted our individual perspectives on working with the relations in each situation.

During the fifth stage, we wrote down our stories and first-hand impressions to give each other means to reflect on the relational details. We drew inspiration from Mason's work, which argues for the value of a brief-but-vivid narrative by 'omitting details which divert attention away from the main issue' [35, p. 57]. We brought the relational aspects to the forefront without focusing on the setting of each account, prompted by questions concerning our emotions, capabilities, and individual and subjective approaches to engaging in relational work. To conclude our trio-ethnographic reflection, we wrote three episodes for each case (see Chapter 4) to present representative moments and communicate our reflections.

4 NARRATIVE EPISODES

In this Chapter, we present narrative episodes to capture the situated, affective and relational dimensions of our PD practice. The episodes were selected from our observations and lived experiences, and depict relations in our cases. Through these narratives, we aim to visualise the complexities of relational work as lived and felt by us.

4.1 Case 1: Relational Care Technologies

This project's first case is situated in the care context, in collaboration with a small Swedish municipal elder care organisation. The project's main goal is to explore how to collaboratively design care technologies based on relational rather than transactional approaches to care. Through a co-design approach, the project involves home-care workers in elder care, administration, care managers and other local 3rd sector stakeholders in an area-based setting, to reimagine how the technology might fuel more relational practices. The project's main activities were approved by the Swedish Ethics Board, and we actively work with the project's ethical aspects.

The PD project's time-frame falls at the beginning of a long-term engagement, planned for two years, during the first six months since the project began.

The researcher's background is in design, with a focus on its social aspects. Despite the researcher's young academic career, they attempt to work with co-design by attuning to themselves and to the existing social and material contingencies. The researcher does not have established routines for working with PD processes, but by practising self-awareness, and with support from the PhD supervisor and their colleagues, they can work as a co-design researcher.

EPISODE 1. Breaking the Ice. The project has just begun. The participants have not yet met in person. The framing is broad, and we all put forward and discuss some preliminary ideas, as a continuation of conversations in which I have not participated.

We meet online to get to know each other. The first 20 minutes of the conversation are essentially small talk: 'Have you tried this karaoke place?' 'The trip we took together last year...'. All the project participants know each other pretty well, except me. I am the one who needs to put in some work to get to know the others and to establish relations, and also to navigate the existing relations. Entering an already-established relationship can be intimidating. Although everybody is kind and reassuring, I do feel some pressure. I feel I need to put on a formal face – show my strengths, capabilities, perspectives, reiterate why I am part of this project and how I can contribute.

Before we meet in person for the first time, for a small presentation of the project, I make triply sure I know what to say and how to convey it. I put on a white shirt, stand before other researchers and social innovators, wonder whether they are convinced or whether I'm using adequately professional language. The presentation ends

well, with questions and feedback. We seemed to break the ice. Later on, I send a one-page summary of the project framing, to be shared with the municipal board. I make sure it conveys both the new and past conversations.

EPISODE 2. Emergent Approval. The project has been ongoing for six months then, and the working relations with the key group have been established, without major conflicts or disturbance. Two key contact persons from the municipality have been helpful, and our communication has been going smoothly; meeting in person has also helped establish trust and give everyone a ‘face’.

While a small engagement at the local Swedish library is being organised, a new relation emerges. Johanna and Alva, the key contact persons, have redirected us to a communication manager. Alicia is a municipal communications officer and, therefore, needs to know how our PD collaboration is communicated to the public. She is the one who needs to approve the text for the event. The newness of this relation does not help us handle the urgency of the situation. We do not know each other, nor have we ever worked with her before. This creates a difficult-to-handle dynamic, especially as the situation is urgent and her professional opinion matters, potentially for the continuation of the whole project.

We exchange many emails, and we do not seem to understand words or even the project in the same way. We struggle to get hold of Alicia, even on the phone. I feel stressed, restless and disturbed, I need to take some deep breaths, as handling this situation is crucial, yet at this moment, also somehow out of control. There is a need for a pause before proceeding. Eventually, with an email sent by a project colleague in her native language (Swedish), and with a long explanation of the project activities, scope and intentions, Alicia seems comfortable approving the activity. Yet, the relation still seems to need more work. We propose an in-person meeting to mend the relation, given that her input may be relevant also in the future.

When we meet again for the workshop activity, the contact person, Johanna, asks, ‘Is everything ok with Alicia?’, making sure that the crisis has been handled and we can proceed with the regular relational work on the project.

EPISODE 3. The Quality of Informal Conversation. We are at the home-care office in Motala. We have not seen each other for quite a while between workshops and co-design work. This is the first time we are taking time to chat informally. One of the colleagues suggested that she will take care of the fika – the coffee break – almost an institution in Sweden. She brings vanilla buns, a typical Swedish treat.

We all sit, chat and laugh together. Conversation flows smoothly, from new institutional changes to (the lack of) language skills. One of the home-care workers admits that every time we exchange emails, she needs to use Google Translate, to make sure she understands everything. I admit that I do the same with Danish emails, as my Danish skills are shaky. We laugh kindly at each other’s vulnerabilities. She asks, ‘How much do you really work on the project?’ The staff still seems confused and in doubt about what the project is about, and how we are working together. One thing is relational work, getting to know each other and attuning to each other’s styles of collaboration and personalities. The other is a (common) understanding of the project and literacy. They go hand in hand. We end our fika with hugs, and say we will see each other

soon for another workshop. ‘Exciting’, they say. We all seem to be enthusiastic about our involvement in the initial phase of working together.

This seemingly irrelevant encounter helped nurture relations through simple, caring gestures and chats. It brought us closer, enabled us to understand each other, and co-become to work better together.

4.2 Case 2: Exploring Relations at the Care Hotel

This project concerns a municipal care facility for those that, although medically sound, require some extra support before returning home after a period of hospitalisation. This case studied collaborative practices, and was a collaboration between a municipality, a healthtech company and a university. The study lasted for less than six months, but was intense, with numerous workshops, design probes, ethnographic fieldwork, video recording and analysis, interviews with a wide range of stakeholders, and so on.

The analysis presented in this paper relates to the set-up and earliest stage of this project (in this case, the first month of project activities). Briefly, the collaboration started following the conclusion of a larger research collaboration in which the three partners participated. The partners decided that the university researcher would lead the study, and the other partners and project representative would form a steering committee that would meet regularly throughout the project period. The researcher has a technical background, including technical project management, and later learned about Participatory Design processes with diverse stakeholders and user groups during their PhD studies. When this case was under way, the researcher held a post-doctoral position related to co-design in healthcare. The researcher had some experience of PD work, but only limited experience of leading PD projects. Therefore, the researcher continuously reflected on the work and how it developed.

EPISODE 1. Initial Tour. Although the organisations involved and their representatives had previously collaborated, they had no prior knowledge of this project, or the care-hotel staff and residents before it began. Entering the project as a co-design researcher required a large amount of relational work, especially as this was a shorter project. After being briefly introduced to the staff by the manager, I was left with the staff. They knew I wanted a guided tour of the facility (i.e. fieldwork) and one staff member took charge and started the tour. Although the tour was informative for the project, and provided ample opportunities to take photos, ask questions and observe the site’s everyday activity, relational work became a central aspect of the tour. The camera, documents and artefacts at the facility (e.g. the medicine cabinet) became artefacts that helped us understand each other. For example, the guide asked why I took photos of something that seemed ordinary to her, and this created an opportunity to discuss project perspectives, methodology and also to learn from the staff. The guiding staff member also asked questions about the study, its expected results, why a researcher from a technical institution would be interested in them, and so on. As a researcher, by demonstrating experience in the care domain, joking a bit and not having a ‘stiff scientist’ attitude (as they expected to some degree), we could connect as two equals, not

as a scientist observing care workers. Looking back, this initial tour was fundamental to establishing a good rapport with all staff members, as the initial guide both remained a staff contact person and facilitated good relations with the rest of the staff after our initial tour.

EPISODE 2. Diary Study. Early in the project, we agreed with staff that they and some of the more resourceful residents would compile diaries over a two-week period. Most of the staff managed to compile diaries, although none of the residents managed to make more than one or two entries, even with support. The diaries for the residents were developed, together with the staff, to align with the residents' capabilities. Yet, observation was the only activity we managed to carry out with the residents. The diaries became a point of disengagement with the residents, and we decided that we would not work directly with them on the project. As a co-design researcher, I found this frustrating. The idea of including the residents felt important, but they could not prioritise their limited resources for the project. This was understandable, ethically correct, yet it was frustrating that we could not work with the older residents, even by testing other methods. Even after the initial disappointment, the outcomes were acceptable. The project went on, and there were many interesting aspects to work on that did not require the residents' direct involvement. The relation we aspired to develop never materialised. The diary may be seen as generating 'negative relationality'.

EPISODE 3. Working with the Steering Group. The project steering group met regularly, especially during the early phase of this project. The steering group comprised the key representative from the municipality, the project manager, the company contact person and the university researcher. The general agenda for each meeting included an overview of the work done since the previous meeting, a presentation of an analysis of the findings so far, and a joint discussion next steps. PowerPoint presentations, and also physical material from the various project activities, were used to communicate work and findings to the steering committee. The presentations of, and insights into the project activities helped to establish consensus and trust (i.e. as evidence that the work was done well). The steering group set the overall project agenda and determined next steps, but, as the university researcher and the person who organised most of the activities, I could also influence what was presented during the meetings, and to some extent, what was decided. If the others believed in me and the results I presented, they would also, to a large extent, follow my suggestions. However, at each meeting I had to perform, I had to present the data so they all understood what they represented and their implications, also from a research perspective. I had to try to anticipate what they liked and what they wanted to get out of the project, while I could continue to perform meaningful research activities that they also felt would yield valuable results. I felt nervous before each meeting, and especially during the early ones, before I had figured out the group dynamics and what each participating organisation valued. When the steering group followed my suggested course of action, I felt proud, happy and that I had been well-prepared. When the group made other decisions, sometimes it was good – the discussions had revealed new insights, but it could also be frustrating if the group wanted to take the work in a direction that I did not feel was the best.

4.3 Case 3: Legacy relations in early childcare and education

The third case presented here involves design work commissioned by a design consultancy company and a Finnish municipality for co-designing digital services for early childcare and education. This intense six-month project was the second initiative of the three-year framework agreement between the company and the municipality. The third author led the company's design team and contributed participatory design expertise to the project. The project team consisted of designers from the company and employees from the municipality, and the project was guided by a steering group. The design researcher has a background in digital media and design, and the co-design practice was an incremental part of their doctoral degree.

Briefly, the municipality's objective was twofold: to investigate and explore possibility of developing a centralised municipal data-management system for digital services, and to design a proof-of-concept of the digital platform and user journeys for early childcare and education. The project included ethnographic fieldwork, interviews with observations, co-design workshops with stakeholders, and the design and testing of various fidelity prototypes.

EPISODE 1. Kick-off Meeting. All the project team's relevant actors – from the design consultancy and from the municipality – came together for a project kick-off meeting. I, as a design lead for the project, was set to present a visual presentation of the work plan and the project team's interpretation, and detailed suggestions for the agreed-upon design work in the contract. As is often customary for commissioned work, prior to the project's launch, the parties negotiated a formal contract, including key responsibilities, deliverables and schedule. This agreement forms a transactional and contractual relation between the parties, and frames the terms of the collaboration. This document, an artefact, is a foundation on which relations and exchanges are built. The design team did not participate in the actual negotiations and terms of the contract; that was handled by other professionals from each side, yet it provided input for the response to the tender.

There were more people present at the kick-off meeting than I expected. Luckily, I had been in the same meeting room before, and there were some familiar faces from the previous project we had recently carried out together. However, the new project was run by another division of the municipality, and their team was new to us. Only the contact person followed us to this new configuration, and some members of the project's steering committee.

The project plan was vigorously discussed, and our first plans received feedback from participants and later, some changes, including priorities, were made, based on suggestions by the municipality's team. This presentation, recreated in a social meeting setting, quickly achieved a similar status as the official contract between the company and the municipality. If deviations from the plan or schedule were made, it was this socially constructed and negotiated plan that had authority in the project. For example, when several versions of the project plan were saved on a shared cloud service, it created uncertainty in the project team about what had been agreed on, and who had the authority to make changes.

EPISODE 2. Inherited Rapports. When, we, the design team from the consultancy side, began the qualitative research phase, the first

activity was a meeting with two core members of the municipality's project team and two people from the consultancy design team to share existing knowledge, experiences and relations. Earlier, the municipality had conducted a set of interviews with families, to better understand their realities and needs with respect to the new service. The interview findings were presented to us as visually (a PowerPoint presentation), which highlighted key concerns and what they learned, accompanied by extracts from the interviews and descriptions of the interviewed families. The project team felt that the sample set did not represent all the families in the municipality, and wished that more interviews were conducted to complement earlier research and include other perspectives. The design team requested the original interview material; however, we did not access it, owing to agreements the municipality had made with other stakeholders. Interestingly, we inherited these reports, or depictions of them, and our task became that of weaving these relations and what was learned from these encounters into the current project at hand. As we had not met or interviewed these families ourselves, this became a matter of interpreting, translating and mediating this base of existing knowledge and relations. It is challenging to represent and do justice to these voices and relations from a relational thinking perspective, and as derived from an understanding of situated knowledge, where knowledge is considered relational, situated and dependent on one's settings relationships and interactions [25].

EPISODE 3. When Past Experiences Surface. The entrance to the community centre is quiet. We have planned to engage with families in a familiar setting, to allow for spontaneous encounters. Around the corner, we hear parents singing with their babies. Through a gym window, we see a session wrapping up. Quickly, we find a table, set up our material, and hope to speak with parents about their views on sharing personal data across databases, for a new digital childhood education and care service.

Most parents rush out, but a few linger. I catch the attention of a woman holding a baby in her arms. After introducing myself and initiative on which we are working with the municipality, I indicated our printed visual material regarding the service journey for registering children in early care. As I present the steps of the journey, I aim to confirm our beliefs concerning the resident's journey, and probe attitudes to data sharing, particularly the idea of residents consenting to aggregate data from various government sources, such as tax information and address, to prefill application templates. This would allow prefilled information in a template to be used to apply for care services, speeding the process.

The woman raises her gaze from the visuals and firmly says: 'I really do not want my ex-husband to know how about my financial details or my living conditions'. I hesitate a bit, before probing a bit more, 'Why would your ex-husband get this information?'. She tells me that a possible reduction in childcare fees is calculated based on income and residence data, which reveal who else lives at the same address.

I find myself nodding, though I am still unsure where the problem lies. She grows impatient with me, restates that the idea of sharing personal data is absurd and shares painful details from her past, which emphasises the importance of keeping her ex-partner uninformed about her status. She seems scared, and in turn, I

feel overwhelmed and ashamed. My somewhat technical inquiry brought to the surface a history better left alone.

5 FRAMING RELATIONALITY BASED ON THE EMPIRICAL ACCOUNTS

In this chapter, we further investigate the case episodes (see details outlined in Table 1) in relation to the existing theoretical concepts. We also discuss the insights they bring to our understanding of relational work and relational reflexivity.

5.1 The Nature of Relational Work

Based on the three cases presented here, we observe that relational work is ubiquitous in PD processes, which echoes Yee et al.'s statement that PD is inherently relational [47]. We conceptualised the intricate nature of relational work in our cases and how relations unfold. We experienced and identified relational work in various forms, such as *initiating*, *building*, *nurturing relations*, *emergent relational work*, *legacy work*, *anticipatory work*, *unfulfilled relational work* and *behind-the-scenes work*. In Dindler and Iversen's words, relations were balanced and became a malleable design material [14]. We also experienced and attuned to relations as described by Akama and Light, accepted their unpredictable and emergent nature, while co-becoming with them [1, 2, 31]. Here, co-becoming implies that when we work with relations, we are formed and influenced by them [2]. One of our main findings is that we encountered both approaches, and below we exemplify their complementary nature.

In *Episode 3. Working with the Steering Group* (case 2), the second author, through the *anticipatory work* of attuning to the project's steering group's future needs, tries to actively shape the relation to advance the work on the project. They try to actively work with and affect relations through professional agency. Relational work also creates a feeling of co-constitution with the relations and being with a group based on the dynamics of the situation, and feeling nervous, content or frustrated, depending on the meeting's unfolding and its relational dynamics.

Similarly, in *Episode 1. Kick-off Meeting* (case 3), as the project is shaped, contractual agreements and planning documents are used to build and work actively with relations. We observe how relational work requires affective attunement to the situation and the setting in which it unfolds. The third author attunes to the room, the participants and the atmosphere of the encounter, which influences their behaviour during relational work and co-becoming with them and their actions.

In *Episode 2. Emergent Approval* (case 1), the first author encounters *emergent relational work* when they need to handle a crisis relation. Here, we observe traces of both relational approaches. On the one hand, the researcher must treat the relation as a design material that needs to be worked with to solve a problem. On the other hand, the situation requires attuning to the emergent relation, which the situation, as the researcher must pause the work to deal with stress before the PD work can progress.

Some relational work is purely co-constituted and requires attuning to what cannot be controlled or designed, including examples of *unfulfilled relational work* and *behind-the-scenes work*. In *Episode 2. Diary Study* (case 2), a relation with the residents does not come to

Table 1: Summary of relational work and relational reflexivity of this project's three cases.

Case	Episode	Relational Work	Relational Reflexivity
Case 1	Episode 1. Breaking the Ice	Legacy work – building on the PD project's established relations and balancing their impact. Initiating and building relations – initiating and attuning to new relations.	Putting extra effort into formal appearance and performance ('formal face'), stressing academic expertise, white shirt.
	Episode 2. Emergent Approval	Emergent relational work – dealing with an uncertain, new relation that proved crucial to continuing the PD project.	Attuning to the body and finding the source of stress, pausing and taking time, and reacting once emotions are quieted, and then writing a formal email.
	Episode 3. The Quality of Informal Conversation	Nurturing relations – deepening and co-becoming with established relations.	Opening up and displaying vulnerability through everyday accounts, giving one another space, having space to share small, caring gestures, sharing pastries during a coffee break in a meeting without an agenda.
Case 2	Episode 1. Initial Tour	Initiating and building relations – initiating and attuning to new relations.	Displaying a 'non-researcher' attitude and an everyday side to the staff, to initiate relations ('informal face').
	Episode 2. Diary Study	Initiating and building relations – initiating and attuning to new relations. Unfulfilled relational work – unsuccessful attempts to initiating relations, co-becoming with them.	Initial frustration, followed by acceptance. Disengagement with residents by introduction of diaries.
	Episode 3. Working with the Steering Group	Anticipatory work – attuning to the group's future needs and directions, to ensure that the project progresses and relations are transformed.	Attuning to group dynamics and organisational values. Feeling nervous, proud and frustrated, depending on outcomes and relations, building trust over time.
Case 3	Episode 1. Kick-off Meeting	Legacy work – building on the past relations of the PD project and balancing their impact. Initiating and building relations – initiating and attuning to new relations.	'Familiarity of faces' – attuning to the participants. Sensing room energy – 'vigourously discussed'. The project participants reworked the formal contract into a new, living document
	Episode 2. Inherited Rapports	Legacy work – building on and attuning to the nuances of established PD project relations, weaving them into the project.	Interpretating established relations, frustration due to not understanding correctly, doubts about doing justice to earlier relations.
	Episode 3. When Past Experiences Surface	Behind-the-scenes work, emotional labour – working with hidden and uncertain relations not directly connected to the PD project.	Listening, accepting, nodding. Addressing overwhelming feelings.

fruition, despite attempts to establish relations with them, with the researcher redirecting their project attention and becoming with the unfulfillment. Similarly, in *Episode 3. A History Left Behind* (case 3), there is no possibility of shaping the relation as a design material; instead, the designer can only accept and attune to the uncomfortable circumstances of the relational work. These relations

are inherently co-constituted and are in becoming with the third author, influencing their state and how they work with relations [2, 32].

The analysis of our data reveals the multifaceted nature of relational work, which often may be both controlled and emergent, which requires different relational work from the researcher. We

acknowledge that more work is needed to unpack further nuances of the intricate nature of relational work.

Our empirical findings concur with by Botero et al.'s statement that 'researchers' accounts tend to sweep over important details about how design, user involvement, collaboration, and participation are achieved or not' [11, p. 18], and that there is a need to uncover the nuances of participatory design and how it gets done [11]. We recognise that the nuances of relational work, being inherent to PD work, may be both mundane and strategic by nature.

5.2 Layers of Relational Reflexivity

Our empirical findings reveal various layers of relational reflexivity entangled in relational work, these being self-reflexivity [37], bias and positionality [37, 47], readying [5], sensitivity to others, and sensitivity to materials and processes [21].

When we apply relational reflexivity, we work with a 'face' metaphor, where we unveil our various facades while attuning to others. The metaphor of a 'formal face', mentioned in *Episode 1. Breaking the Ice* (case 1), emerges during the initial phase of the project, to prove one's academic credibility and emphasise professional knowledge. The 'formal face' is used as a mask that the researcher uses to reveal only certain aspects of themselves. It is also manifested when attuning to the material, more specifically through an article of professional clothing, the white shirt, to establish an assumed 'professional' atmosphere. The act of putting on a 'formal face' also addresses the notion of *positionality*. The young researcher chooses to emphasise their experience with a formal appearance.

In *Episode 1. Initial Tour* (Case 2), a researcher chooses to reveal an 'informal face', to counter their initial concern of being perceived as a 'stiff scientist'. The 'informal face' establishes a more relaxed atmosphere, and a space for both formal and informal conversations. The informal face makes it possible to laugh together, as a way of initiating relations. The positionality of the more experienced researcher shows that their academic proficiency does not need to be underscored; instead, their everyday side is intentionally brought to the initial PD process.

The 'face' metaphor is also found in the initial meeting in *Episode 1. Kick-off Meeting* (case 3). Here, the researcher observes the 'familiarity of the faces' and attunes to the familiar room and (some familiar) people in it, which makes the researcher feel calm and at ease. Even if the researcher is experienced, this helps them to recognise people with whom they have previously worked.

Apart from working with the 'face' as a tactic of relational reflexivity, we apply ad hoc 'readying' techniques to attune to evolving circumstances. One tactic in *Episode 3. When Past Experiences Surface* (case 3) is to use non-verbal communication and nodding to make a participant feel more at ease, to reassure them and to provide emotional comfort. A similar technique is used in *Episode 3. The Quality of Informal Talk* (case 1), where a space for vulnerability is created by inviting stakeholders to a meeting without a set agenda. To attune to oneself, we practise letting go of feelings and emotions such as shame and a sense of being overwhelmed when asking uncomfortable questions of a participant (*Episode 3. When Past Experiences Surface* (case 3)), or stress and frustration, when an

emergent relation must be handled (*Episode 2. Emergent Approval* (case 1)).

5.3 Entanglement of Relational Work and Reflexivity

By identifying and presenting various forms of relational work and reflexivity, we demonstrate their entanglement. Although relationality is ubiquitous in PD [47], we further exemplify how relational work and reflexivity are interdependent and entangled in PD processes. We practise relational reflexivity when we work with relations. In case 1, this occurs when the researcher nurtures relations by sharing stories in an informal meeting, in case 2, when the researcher presents an informal face to initiate relations in the project, and in case 3, when the researcher builds relations while sensing the room. Our work illustrates that working with relations and reflexivity is situated in the project settings and activities, influenced by the researchers' experience and intentions. By applying perspectives from three cases, we observe that relational work and reflexivity may take different forms.

Our findings reflect the literature concerning professional agency and the researcher's personal skills. According to Dindler and Iversen, relational work is bound solely to researcher's professional agency [14], whereas Akama and Light argue for partiality, personal experience and affect in relational work [5]. By depicting and describing the entanglement of relational work and reflexivity, we support the argument that professional agency only partially captures what it means to work with reflexivity and relations. Our paper demonstrates that it is impossible not to consider who we are as people when we engage in PD projects. Our involvement in relational work and reflexivity demonstrate that we work differently based on who we are, our strengths and the professional and personal stories that shape us.

Lastly, we provide a discussion to the PD community, to reflect on relational work and reflexivity as PD researchers' core skills. We ask how one might develop the skillsets of future PD researchers, who will inevitably engage in relational work. What skills, mindsets, learning spaces and study programmes might help to enhance relational awareness? Building on our experiences of relational work, we suggest that PD researchers could collectively incorporate spaces for sharing, reflecting, learning and practising self-awareness, to hone the craft of relational work and reflexivity throughout their careers.

6 CONCLUSIONS

This paper was particularly driven by an attempt to foreground the relations ubiquitous in PD, through the unfolding of relational moments in three PD cases. Informed by the literature findings in Chapter 2, we conceptualise the various dimensions of intricate relational work and reflexivity involved in practising PD, including the various activities, tactics and nuances that shape those efforts. By naming these relational characteristics, we aim to make the invisible, hidden and implicit forms of work more visible. In doing so, this paper contributes to Participatory Design theory and practice by expanding the relational language, and by foregrounding relational work and relational reflexivity as central concerns in PD. Thereby, providing a steppingstone for the PD community

to further explore relational work and to critically discuss how relationality is approached, negotiated, and enacted in PD processes. While doing so, our paper acknowledges the inherent entanglement involved in working with relations, which show that one may treat relations as malleable design material in PD, and attune to and co-become with them, depending on specific relational encounters.

Further research directions could include the various aspects of relational work between the various stakeholders (especially participants' perspectives) and exploring how artefacts may mediate those relations.

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Participatory Design for Intergenerational Dialogue: How the Voice® Model Can Foster a Longevity Society in the Italian Context

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Abstract

In the context of the global trend of ageing population, life expectancy has increased but is not always matched by increased quality of life in later years. The discrepancy between living longer and living in good health reflects deeper structural issues, including ageism and the marginalisation of older adults in the design of products, services, and public spaces. Yet longevity also presents an opportunity, not only for fuller individual lives, but for intergenerational, collaborative exchange and social innovation. This paper explores how participatory design (PD) can challenge the exclusion of ageing populations in innovation processes and create a longevity-ready society. It presents the Voice® model, a global ecosystem that uses qualitative, user-centred research and PD processes to amplify the perspectives of this underrepresented group within intergenerational settings. It shows how dialogue-based methodologies impact design outcomes at the local scale, with evidence of reproducibility of this model and opportunities for scaling the impact. The impact of this model applied in the Italian context is discussed through two case studies: Wagner Municipal Market,

a citizen engagement process for shaping local services in a municipal market in Milan; and Infuriating Objects, a project that uses everyday frustrations to reveal exclusion implemented in the UK, that will be adapted and replicated by Voice®Italia. By enabling older adults to participate in the co-design of products, services, and policies, these cases illustrate how it can impact the local communities involved, how it can harness awareness in public and private organisations, and how everyday spaces can become sites of democratic participation. By reflecting on the replicability of this method, we argue that PD, when rooted in dialogue and intergenerational inclusion, can operate as a cross-sectoral, international infrastructure for social innovation.

CCS Concepts

• **Human-centered computing**; • **Interaction design**; • **Interaction design process and methods**; • **Participatory design**; • **User-centered design**; • **Human computer interaction (HCI)**; • **Empirical studies in HCI**; • **Social and professional topics**; • **User characteristics**; • **Age**; • **Additional Keywords and Phrases**: Participatory design, Intergenerational dialogue, Longevity, Civic engagement, Co-design.; • **Introduction**;



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This paper reflects on how participatory design (PD) methods can create intergenerational dialogue and cohesion that support healthy and longevous communities. It analyses this design practice in Voice®, an international organisation that works with researchers, businesses, and institutions to develop business models, products, and services for healthy ageing within longevity economies while promoting wide societal impact. Voice® is part of the UK National Innovation Center for Ageing (NICA), owned by Newcastle University in Newcastle upon Tyne, and is supported by the UK government¹. Other country branches – local implementations of Voice® – are identified in this paper as *chapters*, as each has peculiar features that adapt the mission and practices to local contexts.

We will refer to the shared frameworks across this ecosystem as the Voice® model. This combines shared tools and practices in the Chapters network to include citizens’ perspectives and ideas in affecting the healthy longevity discourse within the public and private sector.

This paper shows how this model is operationalised in two projects and is analysed from the perspective of the Italian Chapter Voice® Italia. The presence of this Chapter, which is a social enterprise, becomes even more important in the Italian context. Life expectancy in Italy is 82.2 years [26] – one of the highest in the world – but healthy life expectancy, which is “the average number of years in full health a person (usually at age 60) can expect to live based on current rates of ill-health and mortality” [23], is only 70.6 years [26]. This highlights the need for innovative solutions aimed at increasing the quality of life of older adults.

In this work, we refer to the term ‘innovation’ drawing from Breuer’s and Lüdeke-Freund’s value-driven concept of innovation that “understands and applies individual, organisational, societal, and global values, and corresponding normative orientations as a basis for innovation” [1, p.59]. We therefore emphasise that the focus of PD processes is not merely on the quality of the ideas and the outputs’ technical novelty, but on the co-creation of healthy longevity as a collective value. Therefore, we will refer to the impact created by PD processes in this paper as Social Innovation (SI), following Manzini’s definition of SI as “a process of change emerging from the creative re-combination of existing assets (from social capital to historical heritage, from traditional craftsmanship to accessible advanced technology), the aim of which is to achieve socially recognised goals in a new way” [34].

It is the recognition of this broader social and civic value created over time that defines what is ‘innovative’, and this value emerges from a negotiation among diverse stakeholders. We acknowledge that Voice®’s advocacy foregrounds power dynamics in PD processes: values are not fixed but co-created across stakeholders, redistributing influence from traditional actors (i.e. companies, universities, municipalities) toward citizens’ voices – especially those of older adults. By amplifying these diverse perspectives and values, Voice® supports the development of longevity-ready societies.

¹<https://uknica.co.uk/voice/>



Figure 1: Determinants of Health. Graphic elaboration by the Authors from: *Determinants of Health infographic by GoInvo* [14].

1 Background context: from an ageing society to a longevity society

The global trend of ageing populations is reshaping the demographic, social, and economic structures of Western societies. The increase in life expectancy is driven by multiple determinants such as: better healthcare systems and medical research advancements [10, 41, 50], increased attention to lifestyles [27] and nutrition [19].

As stated by the Directorate-General for Economic and Financial Affairs [17], the countries’ expenditure on this trend will be contingent on non-demographic elements: it is the ability of a country to innovate the sectors affected by ageing population – rather than the demographic trend itself – to determine the impact of the trend.

According to the World Health Organization (WHO) framework on healthy ageing [49], most determinants of health are “non-disease related”. This is shown in Figure 1, which adapts the key determinants of health and their relative impact percentages from a comprehensive literature review and infographic developed by GoInvo, a healthcare design consultancy specialised in user-centred health communication.

It highlights that behavioural patterns account for 40% of the factors influencing health, genetics for 30%, social circumstances for 15%, and environmental exposures for 5%, and medical care for only 10%.

The inclusion of older adults in innovation processes is crucial to create a society that can benefit from this trend. In fact, it is estimated that 30% of the total product or service expenditure across the European Union is linked to the Silver Economy [16], defined as the private expenditures of people aged 50 or over. Therefore, there is an untapped opportunity for markets and research in meeting older adults’ needs.

Despite this economic potential, there is still an underrepresentation of older adults in research beyond traditional age-related illnesses such as dementia [40]. Examples of fields concerning

design and innovation in which they are underrepresented are clinical trials [13, 35], spatial planning and housing design [24], and digitalisation of services [31].

We argue that this underrepresentation is strongly connected to diffused practices of ageism, which is an age-based discrimination [9] and is a social construct with effects on cognitive and physical health [47]. This means that stereotypes become assimilated and perpetrated by self-beliefs, one's social network, and institutions, policies, and organisations [47], becoming a systemic issue. Ageism is intersectional and connected to other discriminations, such as racism, sexism, and ableism [20], acting under the dynamic of limiting experiences and access to social, health-related, and economic opportunities [46], challenging not only the realisation of a fairer society, but also creating obstacles to a more diverse and therefore richer humanity.

PD methods in the Voice® model will be analysed under this anti-ageist perspective, following Scott's concept of age malleability [46]: the inclination to perceive older age cohorts as a uniform group with common characteristics, such as cognitive and physical decline, contrasts sharply with the unique combination of backgrounds and experiences.

Building a positive narrative of ageing through intergenerational PD is therefore crucial to achieve a longevity society [46]: a society that challenges current social norms, focuses on prevention and holistic well-being, developing policies that aim to benefit all age groups, rather than being exclusively targeted at older people.

2 PD for Intergenerational Dialogue

2.1 Contextualisation of PD and the concept of generations

PD is an approach rooted in democratic and emancipatory values as developed by the Scandinavian School in the 1970s [18] to involve users in shaping technologies they would use and be affected by [2]. The use of PD has been extended to innovation processes in multiple fields to democratise design decisions [3] and has become a standardised practice in research and industry [5], especially through co-design practices that position users as partners and active co-creators within design processes [44] and as meaningful contributors because they are experts of their own experiences [1, 45].

This approach is becoming particularly relevant in relation to the "Longevity Economy". Coughlin [12] defines this concept as an emerging economic system shaped by the needs and desires of a new, evolving demographic of older adults, once overlooked but now recognised for their substantial social and economic influence. The MIT AgeLab, directed by Dr. Coughlin, is a multidisciplinary research lab that explores and promotes this concept by applying consumer-centred systems thinking across business markets².

An emerging inclusive design practice conceptualised from the work of Sheng Hung Lee at the MIT AgeLab is Design for Longevity (D4L). It advocates for designing with empathy, empowerment, and adaptability to support the evolving needs of the aging population [29], enabling individuals to navigate complex life stages - such as

pre-retirement, retirement, and post-retirement - through participatory, human-centered, and modular approaches that foster social inclusion [30].

In these participatory processes, the role of older adults is intrinsically connected to power dynamics. Despite the notions of equal contribution and democratic participation in PD theory, PD processes are not neutral: they can create new categories of participants, exclude others, and reinforce existing power dynamics - in this case, across generations - rather than dismantling them [4].

The term "generation", first proposed by Mannheim, defines a set of people born in a "common location in the historical dimension of the social process" [32]: belonging to a generation is shaped by shared culture, values, and lifestyles determined by a common historical context. Later, the term became widely used in companies' marketing units in the 1990s to indicate marketing clusters of consumer segmentation by age groups. Given the diversity of identities, behaviours and health among individuals belonging to the same age cohorts, generations function as a contextual construct with multiple meanings.

For this reason, we refer to the term "intergenerational," emphasising the interactive and collaborative dimension of people of different ages, recognising that the term "generation" could be a generalisation of age-based groups of individuals with unique experiences and backgrounds.

2.2 Current limitations of PD processes focusing on age-specific targets

In the context of co-designing with older adults, two aspects are relevant: the stereotyped view of older adults in participation, resulting in their marginalisation; the focus on just older adults, that excludes other generations.

Mannheim et al. [33], referencing to PD practices involving older adults' engagement, introduces ageist approaches that see them as vulnerable individuals, showing that it manifests in the selection of participants, in the judgement of the participants' capabilities and contribution, and in potentially reinforcing self-ageist behaviours of older participants. We agree with Sanchini's multidimensional concept of vulnerability [43], as it is strongly connected to relational, sociocultural, political, and economic instances that concern all age groups.

As the narrative of vulnerability persists, ageist approaches may become internalised. This insight emphasises the need for increased anti-ageist literacy in the PD community to avoid unintended consequences.

On the other hand, 'age inclusive' PD works that focus on designing for older adults are still age-specific and can result as exclusive for 'the older adults of tomorrow', potentially reinforcing generational segregation [11].

Because of these threats, we suggest intergenerational participatory practices in the innovation landscape to overcome both the underrepresentation of older adults, and as a practice to foster cohesive dialogue among people of all ages.

2.3 Intergenerational PD

Intergenerational policies and practices are historically aimed at promoting community cohesion and social inclusion [8] and are

²<https://agelab.mit.edu/about-us/overview/>



Figure 2: Percentages by age range of Voice®members from Voice®UK, Voice®Italia, and Voice®Global in year 2024. UK data are taken directly from the Voice UK Annual Report 2024 [22, p.7], Italian data are derived from the Voice Italia Annual Report 2024 [40, p.7] and verified through the Voice Platform analytics. Global data are based exclusively on the Voice®platform analytics.

characterised by pursuing beneficial activities achieved by participation, and that participants learn and share from the relationships in the activities [42].

Because this reciprocal exchange – beyond family and work contexts – among people of different age groups is lacking [22], these practices are recognised as beneficial to participants at the individual social, and community levels, improving mental health, pro-social and anti-ageing behaviours, reciprocity, and volunteering [38].

As a relational practice, dialogue enables PD to move beyond age inclusivity and to be socially generative, by enabling intergenerational exchange. Its iterative, reciprocal, negotiatory nature, can build an individual and collective sense of agency that bring people of all ages to a harmonic coexistence and collective effort for purposeful SI.

Voice®embodies this approach through its model of dialogic, intergenerational participation. It is an international organisation and platform that focuses on listening and co-creation as key tools for designing a longevity society. By facilitating spaces (both digital and physical) in which people of all ages can share perspectives and shape innovation agendas, Voice®promotes a form of PD that not only reflects but also builds intergenerational dialogue and solidarity. Figure 2 illustrates the percentage distribution of Voice®members by age range in 2024, offering evidence of intergenerational participation across the UK and Italian Chapters and the Global Voice®dataset.

Voice®is proposed as a model to bring intergenerational PD in both public and private contexts, amplifying the impact of exchange and learning for participants from multiple settings, and elevating this opportunity of intergenerational dialogue to meaningful co-existence by showing its outcomes in co-design processes. The peculiarities of its intergenerational PD will be explained in the methodological section of the model and its application in the case studies section.

3 Voice®model and its application in the Italian Chapter

This section presents the origins and goals of Voice®Italia and explains how its social enterprise model implements intergenerational PD practices in the Italian context within an international knowledge ecosystem.

3.1 Origins and mission

The international organisation Voice®was founded in 2007 at Newcastle University by Professor Lynne Corner (social gerontologist) and Professor Emeritus Jim Edwardson (neuroscientist). Its establishment followed work on the *Assessment of Mental Capital Over the Life Course* commissioned by the UK Government’s Department for Science, which involved citizen engagement³.

The acronym VOICE stands for “Valuing Our Intellectual Capital Experience”, reflecting its mission to elevate the capital experience

³<https://voice-global.org/our-story>

of the citizens, especially the wide one of older adults, as fundamental inputs in innovation processes⁴.

Voice®Italia represents the Italian Chapter of Voice®. It is a social enterprise established in 2023 as a not-for-profit company born from the partnership between the Ravasi Garzanti Foundation and Newcastle University which hosts NICA with funding from Amplifon Foundation and Cariplo Foundation [48].

Voice®Italia's mission, as stated in its 2024 social report [48] is twofold: to build a community of citizens, institutions, and organisations involved in innovation processes addressing a positive impact on longevity; to support public and private entities and researchers in building solutions that impact social and economic systems to meet the needs of the demographic change and promote innovations for all ages.

Rather than positioning older people as passive recipients or study subjects, Voice®recognises them as co-creators. Its PD approach intentionally avoids reducing older age to vulnerability. Instead, vulnerability is framed as a contextual, multi-dimensional condition that may affect people at any age. Its philosophy contributes to creating a positive narrative of older adults by creating anti-ageist participation strategies.

3.2 Ecosystem and methodological Infrastructure

Voice®Italia operates within the international ecosystem, combining a digital platform⁵, embedded participatory practices, and global knowledge sharing. Its position is distinct from traditional market research: participation is treated as a driver of social change.

The participatory platform is at the centre of this ecosystem, and each Chapter manages its own. It is a tool for connecting citizens, researchers, and companies across sectors, enabling community-building and the effective participation of people to the projects. Users can engage with the platform as community members, participate to opportunities, screening surveys, and interact in topic-based groups. Groups allow participants to continue dialogue on projects they took part in the digital space. They are moderated by administrators and constitute an additional source of insights. Clients and researchers have access to analytics dashboards and participant screening tools for targeted recruitment.

Voice®Italia's methodology builds on the broader Voice®experience, and its PD processes can involve screening surveys for targeted participation, digital ethnography, participatory co-design sessions, public engagement formats, and design thinking workshops with clients and institutions.

A distinctive feature of the ecosystem is its cross-national and cross-sectoral collaboration. Insights generated in local projects are cross-referenced with international data, enriched through peer learning with other Voice®Chapters (present in UK, Italy, Canada, Taiwan, Singapore, Australia, China, and US, as presented in the launch event of the social enterprise [39]), together with NICA's desk research outputs. This strengthens Voice®'s capacity to provide strategic advice and research-backed recommendations to clients, collaborators, and stakeholders. Chapters share research protocols and co-develop participatory tools grounded in Ageing

Intelligence®, an approach that positions Voice®as a contributor focused on harnessing human experience⁶.

3.3 Voice®Italia's distinctive features

Voice®Italia differentiates from other Chapters in its organisational structure and operational model. While most Voice chapters are embedded within universities and rely on academic funding, Voice®Italia is registered as social enterprise. This enables to operate autonomously from institutional funding – mostly focused on health research⁷ – and adopts a more agile, project-based business model sustained through commissioned research and partnerships with clients.

This entrepreneurial structure fosters a more applied and action-oriented approach to PD, bridging innovation with practical implementation. Its payoff #influenziamoilfuturo (#weinfluencethefuture) reflects its mission to enhance citizens' capabilities in innovation processes and spread intergenerational PD practices across different sectors.

In the public sector, it has supported the Municipality and Province of Sondrio in developing a strategic ageing plan, through the adaptive reuse of institutional spaces for dementia care [48]. In urban regeneration, it co-leads Mi@Over.Net, a PD project funded by the City of Milan to reimagine care infrastructures for older adults [48]. In the technology and industry sectors, it has worked with Piaggio Fast Forward, an international eyewear brand, and AC75 accelerator, for which it acted as an advisor to assess and give advice on how to maximise the social impact of the startups [48]. Further collaboration with local associations and internal projects are detailed in the next section.

This self-sustained model positions Voice®Italia as a contributor to innovation ecosystems while maintaining a strong commitment to social impact and intergenerational inclusion.

4 Case studies

This section illustrates the application of the Voice®model in two Italian case studies: a co-design project at the Wagner Municipal Market in Milan and a local adaptation of *Infuriating Objects*, a project that focuses on everyday vexing objects.

Both projects originate under the Internet of Caring Things (IoCT), NICA's flagship programme that involved Voice®UK. The programme is funded through a £5.6 million investment from the North of Tyne Combined Authority and NICA.⁸ IoCT leverages NICA's advisory on ageing processes and Voice®PD processes to co-develop and test technologies that support the health, independence, and well-being of older adults, engaging citizens, researchers, and businesses. The programme targets 600 start-ups and scale-ups in the North of Tyne region to foster the local longevity economy.

Originally conceived as a UK testbed, IoCT practices are transitioning in the global network of Voice®. The Italian case studies reflect this experience while adapting to local contexts, demonstrating NICA's commitment to embedding its practices in different cultural, social, and regulatory environments, while advancing a longevity-ready society.

⁴<https://uknica.co.uk/voice/>

⁵<https://voiceitalia.community/>

⁶<https://uknica.co.uk/what-we-do/>

⁷<https://uknica.co.uk/voice/>

⁸<https://www.ncl.ac.uk/press/articles/archive/2022/01/nicanotageingbusiness/>

Table 1: Activities that characterised the project. Design by the Authors.

Activity type	Number of sessions run	Duration	Aim of the activity	Activity structure and participant interaction
Open Workshop	6 sessions	3 hours	Raise awareness on the topic of longevity, understand from local people's perspectives what services, spaces and activities the market and the neighbourhood could offer to meet evolving community needs and desires.	Participants enter and exit in 3 interactive areas, each with one question, and answer by writing their ideas on post-its (if open-ended) or by voting (if close-ended). Two facilitators guide them in answering the questions and create opportunities for dialogue if more participants are involved in the workshop at the same time.
Voice Italia Presentation	2 sessions	1 hour	Present Voice Italia's mission, activities, and members' experience; promote participation to the open workshops and to Voice Italia's platform participation.	Collective vision of a video with community members and discussion among participants on the presentation topics, guided by two facilitators.
'Influence the Future' Workshop	1 session	2 hours	Create awareness on how take part in innovation processes as a citizen can influence collective future; present ways citizens are involved in contributing at Voice Italia; promoting participation to the open workshops and to Voice Italia's platform participation	Participation of a small group of 8 in all of the steps. (1) participants present themselves as an ice-breaker; (2) participants are asked to choose a picture that represents the concept of 'influencing the future' and are divided in 2 small groups to work together to build a shared narrative starting from the chosen pictures; (3) plenary presentation of the group outcomes; (4) participants individually draw a 'longevity formula' by choosing among a deck of cards representing factors influencing longevity; (5) plenary presentation of individual outcomes.
Host presentation	6 sessions	1 to 3 hours long	Show examples of products and services selected by Voice Italia that have positive impact on health and longevity.	Participants can enter and exit the presentation fluidly. Participants can get information and try the innovations from the hosts.

4.1 Wagner Municipal Market

The project, set in the Wagner Municipal Market in Milan, has been ongoing since its start in November 2024. It was developed by Voice@Italia in collaboration with the Wagner Municipality Market and the neighbourhood association 'Associazione Zona Wagner' [48].

It aims to raise awareness of longevity by exploring the factors that influence it through participatory activities that engage residents in redesigning the market spaces and services.

The methodology draws from the IoCT project held in the Grainger's Market in Newcastle, UK. There, the Being Well Place, opened from the collaboration of NICA, the Newcastle University's School of Pharmacy and advised by Newcastle City Council, is set as a community hub where the University researchers' use participatory formats to gather insights from local people's needs through

workshops, and promote well-being by offering new health-related technologies trials and screenings [25]. Recognising the market as an everyday space in which citizens feel comfortable in creating interactions with others, Voice@Global implemented this insight in enabling local residents to access and influence health research and innovation, elevating health at a community-wide responsibility [28].

Voice@Italia adapted the participatory approach to the local context, focusing on how longevity affects the neighbourhood services and their users. At the moment of writing, the project developed 14 activities across 4 formats (see Table 1) with a total estimation of 200 participants.

All the activities were promoted on Voice@Italia's platform and required no prior registration to encourage in-place participation. The open workshops (the focus of this case study) were inclusive

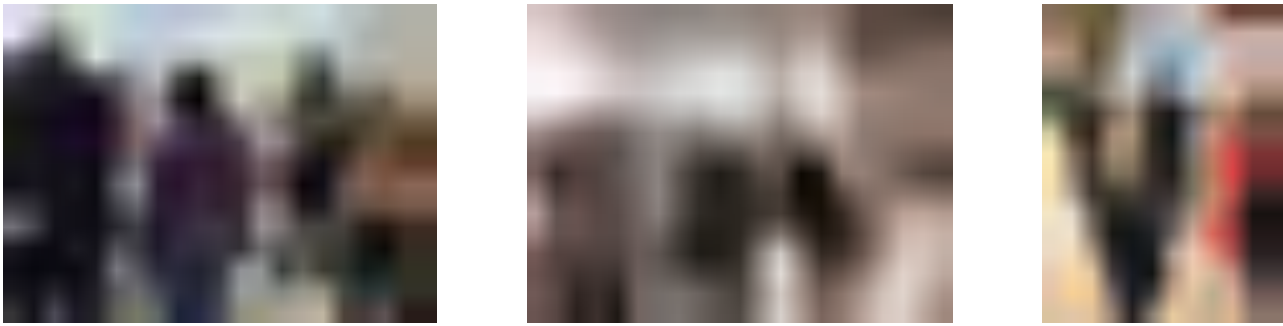


Figure 3: Participants of different ages dialoguing at the open workshops. ©2025 The Authors



Figure 4: Graphic elaboration by the authors of Pagano NIL number of residents by functional age range. Data source: Comune di Milano, 2024 [51].

of all ages, unlike traditional participation criteria, which typically focus on only older adults (see section 3.2). Participants' age ranges were estimated by the workshop facilitators through participant observation and interaction (evidence in Figure 3), and through the discussion of their ideas. No personal data was recorded due to the brief, fluid nature of participation as distinguishing feature to reach more participants. Participants were explained the privacy policy, aims of the activity and conditions by the facilitators before any participation.

Intergenerational representation reflected the demographic profile of the Pagano Local Identity District (NIL – Nucleo di Identità Locale) where the Market is located. As shown in Figure 4, the population of the NIL is skewed towards older age groups, with younger participants underrepresented.

The co-design workshops were structured around 5 sub-thematic areas that longevity affects: future (from the perspective of health, social inclusion, and stability), housing, finances, prevention, and self-perceptions on longevity. These themes were proposed as tangible triggers to first prompt participants to reflect on longevity in their everyday life and to prepare them for generating and discussing collective ideas for the Market. Citizens' inputs were digitalised and in the 'Miro' platform for qualitative and quantitative analysis.

The outcomes from the first workshop on the topic future (Figure 5) highlight that health and the healthcare system, wars, social inclusion and the current condition of youth are common concerns; welfare, wellness, and social activities were needed in the neighbourhood. From this workshop emerged the need to find in the

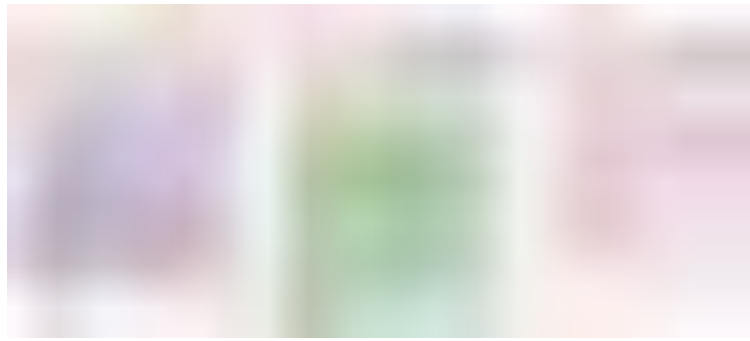


Figure 5: Open workshop outcomes on topic: future. Courtesy of Voice@Italia



Figure 6: Open workshop outcomes on topic: housing. Courtesy of Voice@Italia

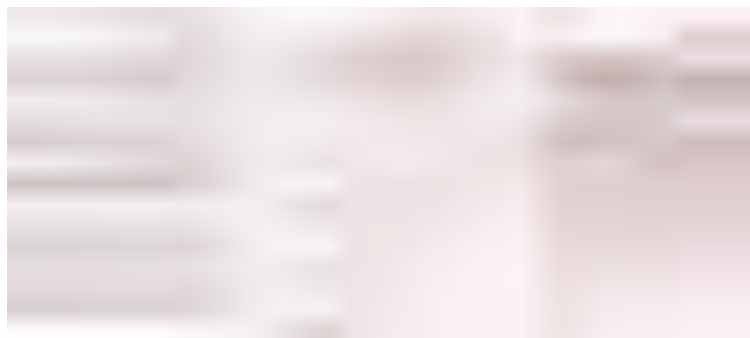


Figure 7: Open workshop outcomes on topic: finances. Courtesy of Voice@Italia

Market a point that could provide information and orientation for older people and their caregivers to support them.

The reflection on living and housing (Figure 6) began with identifying the most important aspects of home, with comfort as top priority, followed by safety and security. When asked what to associate a word with senior housing, the most recurring themes were community and sociability, companionship and socialisation, celebration, fun activities and new stimuli, care and support, independence. Finally, somewhat provocatively, they were asked at what age one would think of moving in, most suggested between 70 and 80.

From the open workshop on finances (Figure 7) most participants feel financially ready to live until 100 and expect to retire at the

same age as now or earlier. Rethinking work, developing new economic models, focusing on birthrate and youth incentives, and other supplementary pensions were the key strategies proposed to envision a longevity-ready society.

The outcomes from the two workshops on prevention (Figure 8) show that health remains a key concern for longevity, often associated with negative words for most people. Despite this, most participants undergo regular checkups especially regarding heart health.

The outcomes from the workshop on own perception of longevity (Figure 9) highlight that participants aim for a longevous life, and most of them combine more actions to be more longevous. Beyond health, the importance of cultivating hobbies, curiosity, attention



Figure 8: Open workshop outcomes on topic: prevention. Courtesy of Voice®Italia

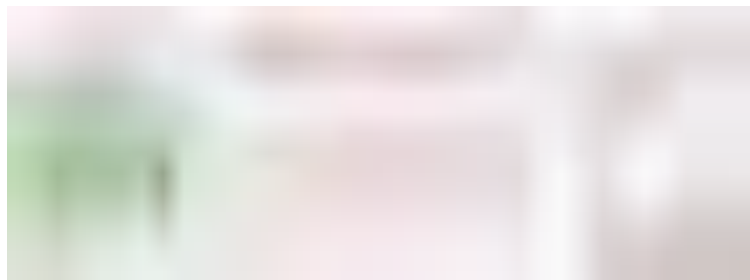


Figure 9: Open workshop outcomes on topic: own perception of longevity. Courtesy of Voice®Italia

to nutrition and physical activity emerged as important factors for longevity.

From the insight on the missing orienting and informing point for older people and their caregivers, the Municipal Market opened in March 2025 CuraMI&ProteggIMI, a service that provide information and orientation to older adults and caregivers. The service is part of the Ravasi Garzanti Foundation, in collaboration with third sector organizations including Cooperativa Eureka!.

Although not all interactions were explicitly intergenerational, anonymising participants' ideas enhanced cross-generational collaboration. This approach revealed shared interests, including concerns regarding youth conditions (answers in Figure 5 and 7), proposals for services targeting children, young families, and older adults (answers in Figure 5), as well as the strengthening of neighbourhood social ties (answers in Figure 5 and 7) and community mutual help (see Figure 6), often expressed by participants outside the intended beneficiary age group.

Displaying participants' ideas as post-its in interactive areas stimulated dialogue: facilitating the identification of recurring themes and encouraging spontaneous interaction. Many participants joined the discussion out of curiosity about others' contributions, demonstrating that visual participatory methods serve as effective entry points for cross-generational engagement.

Translating community needs into a functioning service demonstrates how Voice®Italia not only conducted research into local needs but also leveraged its network to implement the findings. This step is crucial to build the local community's trustworthiness in PD processes, as it provides visible evidence that participants' voices were heard.

Moreover, the project highlights that markets could serve as hubs for intergenerational PD processes for these reasons:

- markets are inherently intergenerational and dialogic spaces: they are frequented daily by people of different age groups who are accustomed to informal interactions;
- they enable in-place participation: allowing participants to project ideas onto the space they inhabit in their routines helps them to take responsibility and ownership of their own contribution, as they see how it shapes their everyday environment.

4.2 Infuriating Objects

Infuriating Objects is a project ideated by two members of the IoCT team: the community manager Catherine Butcher and the design and technology associate Adam Coshieril. The project – as its naming suggests – invites participants to reflect on everyday items that frustrate them *hack* these objects in ways that better meet their personal needs. The term hacking emphasises flexible, user-driven solutions rather than simple redesign. The project harnesses the potential of PD to generate insights into what makes design truly functional, accessible, and satisfying. The resulting insights contributed to the IoCT programme by informing the design and development of products that support longevity and well-being.

Voice®Italia is adapting this project for the Italian context, with its implementation planned in November 2025. The adaptation aims to explore not only the limits of current product design (these objects are “infuriating” because they are not functional for all users and require customisation to suit their needs), but also, in addition



Figure 10: Canva for explaining the object problem and participants' sketches of the solutions and example render elaborated for explaining how participants' ideas would be later prototyped. ©2025 The Authors

to this first objective common to the original project, to generate client contacts.

The PD process for this project is first described through the original version, as Voice@Italia plans to structure it around the same four phases. In phase 1, 16 participants were recruited through the digital participatory platform, following the 'Everyday Hacks' survey published in February 2024, which aimed to create engagement and explore objects that cause frustration in daily life. This data was then used to identify key themes that caused most frustration.

The recruitment consisted of spontaneous applications under registration/login to the platform as Voice members to a dedicated opportunity for participation published in March 2024. Workshop participants were selected from a total of 23 applicants. Participants were previously informed about the involvement of a private stakeholder through the registration process on the opportunity. Create Education⁹, a local company expert in additive manufacturing processes collaborated to the project by providing materials and expert facilitation. Personal and data privacy issues were addressed through the established Voice privacy policies.

Participants were selected based on eligibility (residence in North East England due to the in-person nature of the workshop) and interest. Intergenerationality was not an eligibility criterion, as the project's focus was on demonstrating how accessibility is shaped by individual needs. Consequently, participation was open to all age groups. Nonetheless, the resulting participant profile shows a good mix of ages, indicating an element of intergenerational participation.

In total there were 9 female participants (aged 54 - 84), 6 male participants (aged 39 - 84), and 1 transgender participant (aged 59). An open discussion was held at the School of Engineering to attract potential student volunteers. One MSc student in her twenties participated as a workshop facilitator. Her role was not intended to ensure intergenerationality, yet her presence contributed to the overall age diversity of the group.

The selected participants were asked to identify an object they found infuriating in their daily lives.

In phase 2, participants attended two in-person workshop sessions (in May 2024 and one month later). In the first workshop, participants brought or sketched the object they wanted to hack, and then brainstormed together to create a prototype (either as a drawing or a physical model) of the hacked version. The aim of

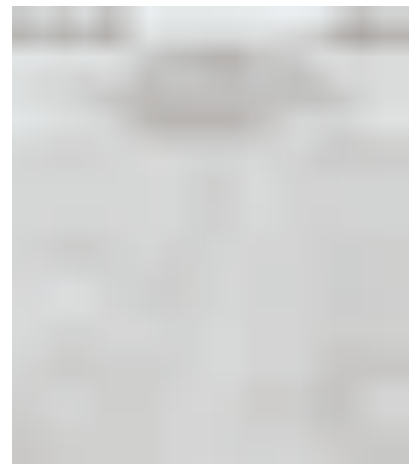


Figure 11: Canva for idea assessment compiled by a participant. ©2025 The Authors

this workshop was to build citizens' design thinking capabilities and make them reflect on the impact of their design on others.

Figure 10 illustrates an example of the canvases used to facilitate participants' reflections in hacking the object, along with a related 3D render as simulating the prototype. These *worked examples* were used throughout the workshops to demonstrate the process of ideation, designing, and prototyping.

An online group was created in the participatory platform¹⁰ to enable participants to exchange ideas and stay connected between the sessions. During this period, participants were encouraged to complete their mission: explore solutions to the objects they found infuriating, create rudimentary prototypes and capture their ideas to bring to the final workshop session.

In the final session, participants were asked to assess their hacked idea through design-thinking methodologies (see Figure 11) and to continue the prototyping phase by collective problem-solving, helping one other in addressing design challenges identified earlier. The outcome of this phase was a final prototype under the form of a drawing or of a model for each participant.

⁹<https://www.createeducation.com/>

¹⁰<https://voice-global.org/groups/mission-possible-3-infuriating-objects>

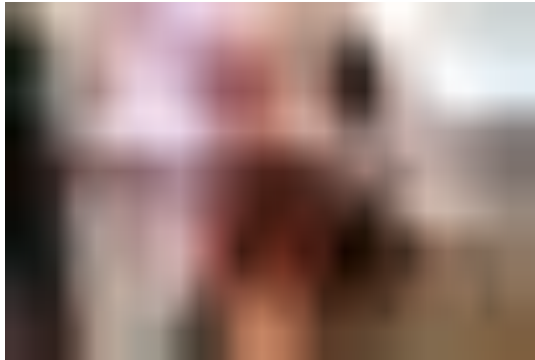


Figure 12: Audience interacting with the exposed objects.
©2025 The Authors

In phase 3, a member of the IoCT team, specialized in industrial design and prototyping, transformed the participants' sketches into physical prototypes using 3D rendering and 3D printing technologies. Participants were not engaged in this phase.

In phase 4, 15 objects were showcased in an exhibition curated by IoCT at the Farrell Centre in Newcastle (22 February – 2 March 2025), with design and research support provided by the NICA and IoCT teams. The exhibition was presented in an interactive format (Figure 12) to engage visitors in reflecting on how design choices influence accessibility. They left comments about how inspiring they found the exhibition and contributed their own ideas for infuriating objects in the Thinking Chair location (Figure 13), a dedicated space for allowing them to reflect on accessibility.

Figure 14 shows examples of hacked objects. The first object on the left, *Get a Grip*, is a mini bottle top opener that is compact, lightweight, and has a grip for opening bottles and jars on the move. It shows how, starting from personal experience, this product can be used for anyone with limited dexterity or for those lids that are too tight to open. *Pull a plug* (the second object from the left) is a foldable device that helps to remove UK plugs (that have a notorious tighter fit than the EU ones) in hard-to-reach places.

The exhibition emerged as an opportunity to support the IoCT programme's goal to foster local businesses' commercialisation within the longevity economy. A dedicated business workshop was held at the Farrell Centre during the exhibition to engage local companies in exploring potential collaborations.

Voice®Italia's adaptation of *Infuriating Objects* will be set within the *Republic of Longevity* space at the 24th International Exhibition Inequalities at Triennale Milano, home of the Italian Design Museum in Milan. Leveraging on the importance of the setting, Voice®Italia aims to amplify the project by connecting the project insights with direct industry relevance. As a social enterprise positioned between civic participation and market-led innovation, Voice®Italia aims to engage design and technology businesses in translating overlooked user needs into more accessible products and services.

Voice®Italia is collaborating with the Google Accessibility Discovery Centre - Google Italia's offices in Milan for this adaptation. The Google Accessibility Discovery Centre showcases assistive technologies that break down barriers in daily life, including adapted videogames and tools for a range of disabilities. By hosting workshops, guided tours, and training sessions the Centre aims to raise awareness and foster collaboration around accessibility and disability¹¹.

The aim of this collaboration is to promote critical awareness of the role of technology, understood both as a potential barrier when accessibility is overlooked and as an enabler when inclusivity is embedded by design.

Participants' recruitment will follow engagement methods as phase 1 but will involve different selection criteria. Selecting participants by age groups will be a key criterion to ensure intergenerational participation and explore whether deliberately intergenerational composition will lead to different outcomes and participants' dynamics compared to the UK experience, where participation was inclusive but not intentionally structured by age.

¹¹<https://blog.google/intl/it-it/google-inaugura-in-italia-uno-spazio-dedicato-alle-tecnologie-accessibili/>

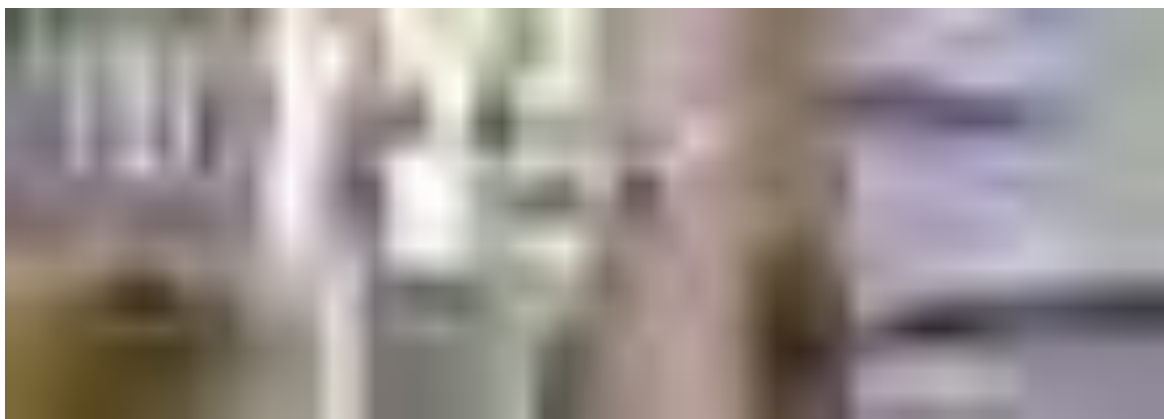


Figure 13: Thinking Chair: a dedicated space in the exhibition with triggers for audience interaction and contribution to the project. ©2025 The Authors



Figure 14: From left: Bottle opener: Get a Grip; Foldable devices to remove plugs: Pull a plug. ©2025 The Authors

Table 2 outlines the workshop steps of the Italian adaptation of phase 2, highlighting that, together with Voice and Google facilitators, AI agents will act as embedded facilitators. They will provide on-demand feedback on participants' ideas, drawing attention to the role of technology. By simulating the perspective of an expert voice, they will guide participants to consider issues of usability, accessibility, inclusivity, and feasibility by replying to participants' written inputs.

The adaptation of phase 3 will involve Google Italia in creating the hacked prototypes, leveraging on the technologies in the Accessibility Discovery Center. Phase 4 will involve the exhibition of the hacked objects (16, one per participant), following the interactive format of the one held at the Farrell Centre.

Although *Infuriating Objects* appears, at first glance, as a product-centred design exercise, its participatory structure fosters intergenerational dialogue by situating personal experience at the centre of collaborative problem-solving.

By reflecting on exclusion not as an age-specific condition, but as a failure of design in considering different bodies, habits, preferences, and needs, life stages are considered and contextualised in personal experience. From the UK experience, when participants co-designed the hacked objects, intergenerational exchange fostered mutual learning by sharing personal experiences.

The Voice®model applies collective assessment and prototyping as a form of reciprocal care. Starting from experience of personal exclusion, participants extend the problem-solving exercise to address others' needs. This collective effort positions this PD practice as a tool that could enhance participants' attention towards accessibility and inclusion, therefore becoming a civic practice. By extending the PD process beyond the workshop through a public and interactive exhibition, the intergenerational reflection is fostered by reaching a wider audience. By interacting with the hacked objects and adding further ideas based on personal experiences, visitors widened the dialogue.

5 Discussion of the insights

The application of the Voice®model in the Italian context shows the potential of PD as a practice to promote intergenerational dialogue and to enable cross-sectorial innovation for a longevity-ready society.

5.1 Leveraging cross-sectorality and the international ecosystem for wider impact

The Voice®model helps to harness “the experience of ageing among changing generations which is critically underexplored” [36] and it does so through design, which is a generative, problem-solving practice [6] that helps to bring about change through the realisation of tangible results, in different sectors. Cross-sectoral innovation is fostered by the organisational nature of this Chapter. As a social enterprise, it can exchange knowledge and practices within the international ecosystem while maintaining independence and self-sustainability by operating with public and private clients and collaborators. An example is the service introduced in the Wagner Municipal Market as a result of the PD process: this implementation provides visible change and civic impact for both stakeholders and citizens.

The replicability of the Voice®model lies in its digital infrastructure and methodological flexibility that integrates online and offline, synchronous, and asynchronous, and various degrees of participation (from surveys to series of workshops). The international ecosystem also allows to triangulate local insights to global data and knowledge, hence enriching local projects with broader perspectives.

Building on the business opportunities that emerged from the UK exhibition, the Italian adaptation of *Infuriating Objects* has been designed from the outset to gain more relevance for the private sector and addresses more technology-oriented design challenges. This adaptation wants to be an example for Italian businesses of how Voice®intergenerational PD methods could be adapted in their design processes, recognising that companies are an equally crucial actor in building a longevity-ready society, as the work of the MIT AgeLab has already demonstrated (see section 3.1). By tailoring

Table 2: Structure of the Workshop (Phase 2 of Infuriating Objects) by Voice®Italia and Google

Step	Intro	Group Work	Idea Concept	Prototyping	Idea Pitch	Outro
Timing	10 minutes	20 minutes	15 minutes	20 minutes	25 minutes	5 minutes
Facilitators Actions	They introduce the reason for Infuriating Objects and outline the schedule of activities	They divide the participants into 2 groups of 4 (pre-selected) + one AI agent each. They facilitate the discussion (1 round of ideas per group)	They explain how to fill out the concept sheet. They assist participants if requested	They explain what a prototype is and how to create one using materials or by sketching. They assist participants if requested	They manage the timing of individual presentations	They thank and bid farewell to the participants while giving a small gift
Participants Actions		Each participant has 3 minutes to present the chosen object and the related hacking idea. Group discussion of the hacking idea. The presenter can note down ideas coming from	Each participant individually fills out the concept of their idea. At the end of the completion, they consult the AI for feedback on the idea useful for the prototyping step	Each participant draws or builds the prototype using the available materials	Each participant has 3 minutes to pitch their idea to the other participants	
AI Agents Actions	They introduce themselves briefly	They provide feedback on each idea, like the other participants (must be configured to push a bit on the technological aspect for each object)	They are available for individual doubts and ideas from participants as a facilitator. At the end of the idea, they give specific feedback on the concept regarding tech/materials/usability	They are available for individual doubts and ideas from participants as a facilitator		
Supports	Computer/Tablet from which the AI Agent will speak	Pens and pre-filled sheets for taking notes. Computer/Tablet from which the AI Agent will speak	Concept sheet for the idea Computer/Tablet from which the AI Agent will speak	Sheet for drawing the prototype. A5 card with examples of prototypes made with materials and sketches. Prototyping materials. Computer/Tablet from which the AI Agent will speak		

products and services to the real needs of an aging population, companies create solutions that benefit society and create profitable market value.

5.2 Lessons from intergenerational PD

The case study of the *Wagner Municipal Market* demonstrates how the open workshop format can foster spontaneous intergenerational interactions and dialogue among participants.

The *Infuriating Objects* case study contributes to intergenerational PD literature by showing that this approach is most effective when individual experiential pain points (i.e. difficulties in using an object) are reframed as manifestations of systemic, latent exclusion, rather than being attributed solely to stereotyped categories such as age or disability.

The methodological contribution of the Voice@system lies in its use of intergenerational PD to generate long-lasting social impact through diversity: both across stakeholders (diversity of clients and collaborators) and citizens (diversity of age and personal experience).

In its early implementations (the *Wagner Municipal Market* case study and the UK implementation of *Infuriating Objects*), intergenerationality was treated inclusively: participants of all ages were welcome without prior selection. While this approach successfully demonstrated spontaneous dialogue across generations, future iterations, such as the planned Italian adaptation of *Infuriating Objects*, will adopt a more intentional selection strategy by ensuring balanced representation across age groups. This shift aims to enable a more systematic evaluation of intergenerational collaboration and its outcomes.

This intentional intergenerationality will also be supported by the context of the exhibition space, *Republic of Longevity*, where the workshop is set. The exhibition explores how everyday practices, often shaped by systemic inequalities, can become tools for democratising health and promoting a more equitable longevity. Set within this context, the *Infuriating Objects* workshop connects to the exhibition's mission by transforming experiences of exclusion into wider opportunities for inclusive design.

The *hacking* itself in *Infuriating Objects* offers a lens for understanding the temporal dimension of impact generated by intergenerational PD. While individual participants experience immediate empowerment from reflection in the act of hacking an object (and observing its implementation, even if in the form of a functioning prototype), the broader social and civic value of these innovations unfolds over time, as ideas are absorbed by institutions, businesses, and communities through workshops, exhibitions, and follow-up collaborations. This Voice@'s longitudinal engagement model helps to trace how citizens' insights evolve from personal reflection to collective implementations. This methodological continuity positions Voice@ as a system capable of linking short-term participatory outcomes with long-term SI.

These lessons drawn from the case studies' findings provide further guidance in structuring PD approaches. However, it is important to notice that these lessons come specifically from case studies held in a European setting, hence their replicability in other contexts might not have the same results.

5.3 Importance of place for intergenerational PD dialogue

The *Wagner Municipal Market* project demonstrates how the choice of location played a crucial role in achieving intergenerational participation, community trust, and mutual learning: such practices are more effective when rooted in everyday spaces that naturally enable informal, intergenerational interactions.

Markets can be key enablers of intergenerational participation due to their social, cultural, and economic relevance in citizens' routines [21]. They are not only spaces for food and goods exchange but also for dialogue, relational interaction, and shared experience. In the context of promoting healthy ageing and longevity-ready societies and economies, markets have unique features that can support healthy ageing: they promote physical health by ensuring access to fresh produce, facilitate physical activity, and are cognitively and socially stimulating environments [15]. Interacting with vendors, comparing products, and participating in community events all contribute to cognitive resilience and mental well-being. Moreover, markets function as informal educational spaces where intergenerational knowledge exchange occurs organically (such as cooking techniques), preserving cultural memory while encouraging lifelong learning. [15].

Markets function as democratic third spaces, offering people of different ages and social backgrounds an interaction without rigid roles. These *third spaces*, as described by Muller [37], are fertile environments for PD because they support negotiation and polyvocal dialogue.

The Wagner case also illustrates how intergenerational grassroots participation enabled the transformation of its spaces and services tailored to the evolving community needs. Markets could therefore become neighbourhood-scale platforms for SI. The project - if replicated in other municipal markets across Milan - could contribute to city-wide innovation in welfare and service planning. In this vision, the Milanese context presents a promising opportunity: municipal markets can serve as catalysts for longevity-ready neighbourhoods. Voice Italia is now exploring new implementations in other municipal markets and cafeterias, which also serve as potential intergenerational hubs.

6 Conclusions

This paper has explored how PD, when grounded in dialogue and intergenerationality, can help shape a longevity-ready society: fairer, more inclusive, more thriving.

Through the analysis of the Voice@model and its international ecosystem, the potential of intergenerational PD practices becomes relevant in their cross-sectoral, international impact on the co-creation of services, products, and business models that respond to the needs of people of all ages.

By analysing the methodology in two case studies – with particular attention to the Italian implementation – findings suggest that PD could become an infrastructure for systems-wide innovation, not just as a consultation process: it implements design outputs to create tangible impact and shared social value across stakeholders and citizens.

Voice®Italia's organisational structure as a social enterprise within a global ecosystem facilitates collaboration with cross-sectoral entities, and it contributes to the scalability of the Voice®model and contextual adaptability. This hybrid position between civic engagement and market impact highlights the potential for participatory infrastructures to drive cultural as well as economic transformation.

This paper contributes to PD literature by placing PD methods in the intergenerational discourse by providing practical insights from the case studies to foster coexistence and reciprocal exchange among people of all ages, with particular attention to valuing individual personal experience and finding the right places to foster dialogue, starting from markets as places where daily intergenerational interactions already exist. It also presents Voice®PD methods and its international ecosystem for the first time in a paper, helping to present new models of PD approaches.

Future work should further explore how to sustain intergenerational PD practices over time, how to systematically assess the longevity of the outcomes and the perceived value of those who were involved in PD, and examine how methodologies like those of Voice®can scale while maintaining contextual flexibility. The insights from the Voice®Italia Chapter may serve as a blueprint for embedding intergenerational dialogue across the social, public, and private spheres of societies that age well.

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Resettlement Work: Accounting for the Invisible Work of Refugee Community Health Workers

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Abstract

In this article, I examine the complex and often invisible labor of Community Health Workers (CHWs) in the context of refugee resettlement. Guided by the question, *How do CHWs support refugees as they resettle in host cities?*, this study draws on ethnographic research, including focus groups, workshops, and site visits with CHWs serving refugee communities in Kentucky, USA. The findings highlight the *everyday interventions, trust infrastructures, and cultural mediations* that CHWs engage in as part of their work. I introduce the concept of Resettlement Work to describe this distinctive form of labor of CHWs, which is relational, adaptive, and critical to the survival and well-being of displaced individuals, yet remains largely unrecognized by formal health and social systems. By centering the everyday experiences, and the cultural and linguistic needs of CHWs and their clients, this article calls for the co-design of refugee resettlement infrastructures by urging greater investment in, and recognition of, the human infrastructures that make refugee resettlement possible.

CCS Concepts

• Human-centered computing → Empirical studies in HCI.

Keywords

community health workers, refugees, care, labor

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1 Introduction

In the global landscape of displacement and forced migration, cities in the West have become critical sites of refugee resettlement, where everyday survival and integration hinge on localized networks of care, support, and navigation [17]. At the center of these networks are Community Health Workers (CHWs), a diverse group of intermediaries who provide vital health, social, and emotional support to refugee communities [33, 43]. Often drawn from the same communities they serve, CHWs act as cultural brokers, advocates, and informal policy implementers, bridging the gaps between overstretched

public institutions and marginalized populations navigating unfamiliar bureaucracies. Existing research points to how CHWs assist with everything from securing healthcare appointments and translating medical terminology, to addressing trauma, housing instability, transport, and food insecurity [12, 22, 42, 49, 50]. These tasks are compounded by the emotional toll of working within systems marked by scarcity, exclusion, and crisis response [18, 41, 54].

Much of the labor performed by CHWs is invisible, relational, informal, and improvisational, which make it difficult to capture through conventional metrics of success or efficiency [37, 38, 67]. In the context of refugee resettlement, where needs are rarely organized into discrete categories, CHWs serve as vital points of continuity, trust, and care within otherwise fragmented and overburdened service infrastructures. Although existing scholarship has examined the broader roles of CHWs and the systemic challenges faced by refugees during resettlement, little attention has been paid to the specific and situated labor of CHWs working with refugee populations. This leaves the complexity of their contributions under-theorized and under-valued, particularly in relation to how they navigate, stitch together, and improvise across multiple institutional and cultural domains

In this article, I examine the complex, often invisible labor performed by CHWs in the context of refugee resettlement. It is guided by the central question: *How do community health workers support refugees resettle in their host cities?* To explore this, I employ an ethnographic methodology that includes focus groups, workshops, and site visits with a cohort of CHWs working exclusively with refugee populations in the Commonwealth of Kentucky, USA. Through this grounded engagement, I illuminate the assemblage of *everyday interventions, trust infrastructures, and cultural mediations* that CHWs mobilize as they help displaced individuals navigate the multifaceted challenges of resettlement. I use the term **Resettlement Work** to conceptualize this specialized form of labor, which is a type of frontline care that is relational, adaptive, and frequently unacknowledged by formal institutions. By centering the everyday experiences, and the cultural and linguistic needs of CHWs and their clients, this article seeks to make visible the complexity of resettlement work and argue for a fundamental reevaluation of the care infrastructures that can support such work.

2 Related Work

2.1 The Work of Community Health Workers within Care Infrastructures

CHWs are broadly defined as “skilled community members who work with communities to improve health through a variety of



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strategies” [50]. While some CHWs complete formal credentialing programs, many enter the role through diverse pathways as healthcare professionals, social service providers, educators, public health workers, volunteers, local leaders, or informal caregivers [32]. CHWs are a vital part of the infrastructure that sustains the health and well-being of communities by delivering care, disseminating health information, responding to crises, and addressing key social determinants of health such as housing, food security, and education.

This article draws on definitions of infrastructure by scholars such as Susan Leigh Star, Geoffrey Bowker, and Karen Ruhleder, who suggest that infrastructures are not merely physical or technical systems but socio-technical assemblages that are embedded in practice, relational, and often invisible until they break down. Star and Ruhleder conceptualized infrastructure as something that becomes part of the background of daily activities, learned through membership in communities, shaped by standards, and deeply intertwined with social organization and routines [59]. Bowker and Star further emphasized how infrastructures are not neutral but are shaped by and reinforce power, norms, and categories of inclusion and exclusion [58]. More recent scholarship has expanded this definition to incorporate notions of care, foregrounding the often invisible, emotional, and gendered labor that is required to maintain and sustain infrastructures over time. Jackson reframes infrastructure through the lens of “repair” and “maintenance,” highlighting the importance of ongoing work in keeping systems functional [24]. Puig de la Bellacasa goes further to argue that care itself is infrastructural: a relational and affective practice that underpins the very possibility of systems functioning [48]. This shift challenges techno-centric and efficiency-driven models by emphasizing that infrastructures endure not just through design or innovation, but through situated acts of care, attention, and repair that is often carried out by marginalized or under-recognized actors, such as CHWs.

Positioned at the intersection of formal systems and community life, CHWs serve as cultural mediators and advocates for social justice, working to make health infrastructures more accessible and equitable, particularly for populations that have been historically marginalized or excluded from institutional care [50]. CHWs constitute a vital part of what scholars refer to as the “human infrastructure” that sustains the health and well-being of communities [31]. Unlike physical infrastructure, which depends on facilities, equipment, and technology, human infrastructure is grounded in trust, communication, cultural competence, and locally embedded knowledge [26, 34, 45, 51]. This relational and contextual work is essential to bridging systemic gaps and fostering health equity, especially in under-resourced or culturally diverse communities. Scholars have described this as a form of articulation work, which refers to the invisible labor performed within formalized structures of cooperative work, ensuring that different components work well together [20, 52, 61].

The work performed by CHWs is characterized as invisible and multifaceted, often going unrecognized and undervalued within formal healthcare systems [37, 38, 67]. CHWs routinely exceed the boundaries of their formal job descriptions in order to meet the evolving and context-specific needs of their clients. In the context of

U.S. refugee resettlement, this often includes helping individuals acclimate to and navigate the intricacies of the U.S. healthcare system, which is not only complex but frequently inaccessible to newcomers [21]. This form of *navigational competence* involves more than logistical coordination, it requires navigating delicate interpersonal dynamics between patients and providers, managing the emotional labor of care, and translating clinical information in ways that are culturally and linguistically appropriate [21]. As Verdezoto et al. note, CHWs not only sustain relationships across fragmented infrastructures but must also find ways to sustain themselves in the process, often without adequate institutional recognition or support [67].

CHWs experience a significant amount of stress due to heavy workloads, poor infrastructure, inconsistent payments, and social/gender-based challenges [54]. The pandemic exasperated their mental health issues, with many CHWs in low and middle income countries reporting depression, anxiety, fear, burnout, and fatigue [41]. CHWs reported using coping strategies like humor, family support, and substance use, and expressed a need for regular mental health checkups and counseling [41]. They also cope through informal support networks, personal resilience, and religious or spiritual practices.

In response to the growing recognition of the critical role CHWs play in sustaining community health, scholars in HCI and related fields have explored a range of digital interventions designed to support and extend their work. These efforts include the use of SMS-based outreach systems [46], mobile phone applications [6], web-based platforms [12], chat-based agents [29], voice technologies [66], artificial intelligence [42], and more recently, large language models (LLMs) [13, 49, 55]. AI-powered tools like Microsoft’s Dragon CoPilot, NudgeAI, and PatientNotes have been developed to automate routine documentation tasks, reducing administrative burdens and enhancing the quality and consistency of clinical records.

However, as CHWs operate within high-stress, resource-constrained, and technologically mediated environments, researchers have argued for a parallel investment in the human infrastructure that underpins effective care work [25]. Ismail et al. [23] advocate for participatory design approaches that enable CHWs to center their own needs, particularly those related to survival, resilience, advocacy, and resistance within the design of care infrastructures. Such approaches empower CHWs to articulate and shape the futures they envision for themselves and their communities. Similarly, Alam and Houston adopt a feminist, relational lens to propose care as an alternative infrastructure that foregrounds community-driven, life-sustaining practices that resist institutional exclusion and marginalization [2].

This article builds on these frameworks by bringing scholarship on care infrastructure design with CHWs into conversation with research on refugee resettlement. In doing so, it offers a more nuanced and situated account of the multifaceted work CHWs perform in refugee resettlement contexts, and argues for the inclusion of CHWs in shaping the technologies and systems that govern their labor and the well being of their communities.

2.2 Participatory Design within Resettlement Contexts

HCI scholars have increasingly employed participatory and design-based research methods to engage with refugees across diverse contexts. The inherently multicultural nature of refugee settings underscores the value of participatory approaches, which enable more inclusive, culturally sensitive engagements. Cultural probes have emerged as a widely used method in this space, offering adaptable tools for eliciting rich, situated knowledge from culturally diverse populations [11, 19]. For example, Almohamed and Vyas utilized sketchbooks, maps, cameras, and audio recorders as probes to explore the challenges refugees and asylum seekers face when resettling in Australia [3]. Their work offered practical, theoretical, and technological implications aimed at fostering social capital among displaced populations, and identified key barriers such as mistrust, cultural dissonance, and trauma [4]. Similarly, Coles-Kemp and Jensen employed cultural probes to investigate how newcomers used mobile phones to access services embedded within resettlement infrastructures [9]. Brown and Choi, in contrast, referred to their materials as *Creative Kits*, which they used in participatory workshops to co-create care booklets and design artifacts that documented the lived experiences, needs, and aspirations of refugees resettling in Australia [7].

Refugee camps have served as contexts for participatory research, offering opportunities for refugee agency and self-expression. Fisher et al. developed Teen Design Days, a scalable, portable methodology for engaging youth in concept exploration and participatory design in ways that are sensitive to developmental, cultural, and gender-related needs [15]. In subsequent work, they organized participatory workshops with Syrian youth in the Za'atari refugee camp, where participants designed "Magic Genius Devices" to express how they support others' information needs. The study underscored the participants' creativity, technological aptitude, and community roles, offering implications for more responsive humanitarian interventions [16]. Similarly, Xu and colleagues proposed the use of public participatory GIS (PPGIS) to map local assets and inform the development of more sustainable and supportive environments within refugee camps [69].

Researchers have also drawn from a spectrum of both traditional and innovative methods to engage refugee communities. Building on foundational participatory design practices [14], Tachtler et al. conducted interviews and design workshops to explore the support systems available to unaccompanied migrant youth. Their work proposed a socioecological model of resilience as a framework for understanding the challenges faced by this demographic and for guiding the co-design of mental health technologies [62, 63]. In a related effort, Brown et al. facilitated focus groups and participatory design sessions with Caribbean immigrant women to explore health and wellness challenges and conceptualize supportive technologies [8]. Song et al. employed a photo-diary study and semi-structured interviews to describe how refugees perceived the initial services they received within the first six months of their arrival in Australia [56].

Innovative approaches have further expanded the methodological repertoire. Talhouk et al. introduced dialogue cards to investigate

sociotechnical systems, power asymmetries, and the coping strategies that refugees used in Lebanon when interacting with digital aid infrastructures, such as the e-voucher system [64]. Their work also involved prototyping a community radio initiative to assess its impact on Syrian refugee health education, community cohesion, and the dynamics between healthcare providers and refugee communities. Weibert et al. employed digital storytelling as a tool for newly arrived migrants and long-term residents to articulate and share their positionalities, which helped support mutual understanding and social integration [68]. Molapo et al. used participatory action research to co-design technologies with CHWs, centering their lived experience and literacy levels to shape a shared research agenda. Through iterative engagement, CHWs gained confidence in using technology, resulting in context-appropriate design outcomes, including early insights into a feedback mechanism tailored to their work [39].

The semi-structured focus groups, journey mapping workshop, and site visits employed in this study draw from this corpus of participatory design research while also prioritizing the creation of space to elicit more personal and emotional responses from the CHWs. Emotions and personal narratives can substantially enrich participatory design research by grounding the design process in participants' lived experiences. These stories offer nuanced insights into users' values, challenges, motivations, and cultural contexts—dimensions that often remain obscured in more conventional research approaches [40, 44]. By foregrounding emotion and personal experience, this approach not only deepens the quality and relevance of the research outcomes but also strengthens the relational and ethical foundations of participatory design.

3 Methods

3.1 The Resettlement Context in Kentucky

At the end of June 2024, there were nearly 43.7 million refugees globally¹, of which the United Nations High Commissioner for Refugees (UNHCR) identifies about 1 million for resettlement every year [10]. On an average, between 1982 and 2016, the U.S. has resettled about 0.6% of those identified for resettlement each year. The number of refugees admitted to the US is determined by the President in consultation with Congress. While the US has historically been the leader in resettling refugees, the number has fluctuated yearly based on the global refugee population and the political climate in the US². This number is also shaped by global events. For example, the COVID-19 pandemic significantly slowed the resettlement pipeline, depleting resources and staff capacity across the national infrastructure. In contrast, the fall of Kabul and the Taliban's return to power in 2021 triggered a sudden influx of Afghan refugees, placing acute stress on an already strained system.

Refugee resettlement in the United States is a complex, multi-step process involving coordination among federal, state, and local agencies to screen, interview, place, and support individuals and families as they transition to new lives in the U.S.³. Upon arrival, refugees are received by one of nine national resettlement agencies

¹<https://www.unhcr.org/refugee-statistics>

²<https://www.migrationpolicy.org/programs/data-hub/charts/us-refugee-resettlement>

³<https://connect.icmc.net/how-the-us-refugee-resettlement-program-works/>

in the US, which offer support in housing, employment, education, and healthcare for at least the first 90 days, while long-term assistance is available through additional programs that target economic self-sufficiency, language development, healthcare, education, and other specific needs.

Kentucky has consistently ranked among the top states for refugee resettlement, both in total numbers and per capita⁴. The Kentucky Office for Refugees (KOR), based in Louisville, is the federally designated agency responsible for coordinating refugee resettlement and integration efforts throughout the state. Operating under the Kentucky Cabinet for Health and Family Services, KOR oversees the distribution of state and federal funds, ensuring they reach local resettlement agencies, healthcare providers, and community organizations. Its core responsibilities include grants management, policy development, and program oversight aimed at promoting self-sufficiency and community integration for refugee populations across Kentucky. With limited ability to forecast future arrivals or funding, KOR and their collaborators are often forced to operate in a reactive mode, scrambling to secure resources, build capacity, and meet shifting community needs. These unpredictable fluctuations create ongoing challenges for CHWs and the rest of the human infrastructure working in refugee support roles.

At the time this study was organized, KOR employed 12 CHWs to support refugees with their healthcare and integration needs across the Commonwealth. These CHWs are usually the face of the resettlement agencies and form a crucial part of the resettlement infrastructure. KOR works in partnership with a wide range of organizations, including Family Health Centers, the Americana World Community Center, Bluegrass Community Health Center, and the network of International Centers throughout the Commonwealth. These partners deliver essential services such as health care, language access, housing support, and employment assistance to newly arrived refugees.

The CHWs who participated in this study were employed by one of the health clinics supported by KOR. Many of these workers are themselves former refugees who, having navigated the resettlement process, are uniquely positioned to support others in their communities. They play a vital role in bridging cultural, linguistic, and systemic gaps between refugees and U.S. health and social service systems. Their responsibilities are multifaceted, encompassing roles as health educators, translators, advocates, care navigators, and at times, informal social workers. In doing so, they help ensure that others in their communities receive the support they need during the initial resettlement phase and as they work toward long-term stability and integration.

Due to the small number of CHWs who participated in this study, even minimal details could lead to their identification. Given the precarious nature of their work, I have deliberately omitted additional demographic information to ensure their anonymity and maintain confidentiality.

3.2 Recruitment, Data Collection, and Analysis

The findings presented in this article are based on multiple forms of engagement with the CHWs. My first mode of engagement involved organizing a focus group with six CHWs in collaboration

with a staff member at KOR. The goal of this session was to explore how we might better support CHWs in their roles. Building on insights from that initial conversation, we later convened a journey mapping workshop with the 12 CHWs and their 3 managers, which provided a deeper understanding of the complex, layered interactions between CHWs and the refugees they serve. Additionally, I shadowed two CHWs as they facilitated community discussions, coordinated mobile clinics, and conducted home visits, which offered a richer appreciation of the nuanced and often demanding nature of their work. All components of this research were approved by my Institutional Review Board (IRB) and contributed to a grounded understanding of the daily realities CHWs face.

I chose to invite CHWs to participate in a focus group rather than individual interviews, as this format fosters informal, collective discussion and allows participants to build on each others insights [53]. The focus group, which was held virtually via Zoom, lasted an hour and 43 minutes and was audio/video recorded with the participants' consent. I used a semi-structured format, but was also intentional about creating space for CHWs to voice their concerns openly and candidly. My guiding questions focused on their day-to-day responsibilities, the nature of their interactions, and the specific resources they relied upon. To acknowledge their time and insights, each participant received a \$50 gift card.

Journey mapping workshops are most powerful when used as participatory tools for sensemaking, empathy building, and co-design, helping groups collectively understand current realities and imagine better future experiences [5, 27]. Our journey mapping workshop was scheduled three months after the focus group and was held at an auditorium during the lunch break of a conference that the CHWs were attending. This was done to ensure convenience and maximize attendance. The 45-minute session divided participants into four groups of three to five members each, where grouping was based on the clinics with which the CHWs were affiliated. In the workshop, CHWs collaboratively mapped their clients' needs, described key points of interaction, and identified opportunities to improve care delivery. The journey map template (shown in Figure 1) included prompts to document not only procedural steps but also the emotional experiences of both CHWs and their clients throughout the process. CHWs completed the maps in pairs, while their managers served as scribes, capturing key insights on poster paper that also functioned as a springboard for broader discussion. Participants spent the first 15 minutes completing their journey maps, followed by a 30-minute reflective discussion to surface shared themes and actionable ideas. Because the session was embedded within a broader professional development event, no additional compensation was provided, in line with KOR's existing policy.

I documented the workshop using photographs and audio recordings via Zoom, which also generated automated transcripts. I reviewed these transcripts and corrected them for accuracy before using them in the analysis. Following an iterative qualitative analysis approach [65], I immersed myself in the recordings, constantly comparing insights from the discussions, journey maps, and my field notes with relevant literature. The journey map in Figure 1 summarizes all the comments that the CHWs documented in their respective maps. Initial codes from my analysis included references

⁴<https://www.kentuckyrefugees.org/refugees-in-kentucky/>

Table 1: Overview of research questions and methods used.

Research Questions	Method	Participant Logistics
What do everyday interactions between CHWs and their clients look like? What specific resources do they rely upon for these interactions?	Focus group	Six CHWs and a staff member from KOR attended this focus group via Zoom. The meeting lasted for one hour and 43 minutes.
How do CHWs and their clients communicate before, during, and after their meetings? What emotions do CHWs and their clients feel during their everyday interactions?	Journey mapping workshop	12 CHWs, 3 managers, and one staff member from KOR attended this workshop. The workshop lasted 45 minutes.
What kinds of issues to CHWs help their clients with? Are these issues primarily health related or do they go beyond health as well?	Site visits	Shadowed two CHWs as they facilitated community discussions and conducted home visits. The total duration of these visits was about 10 hours.

to education, interpretation, communication, support, resource accessibility, frustration, pride, relationships, and misunderstandings. I refined these codes and organized them into higher-level themes through constant comparison and analytic memoing, and grouped into higher-order thematic categories. This process led me to identify of *everyday interventions*, *trust infrastructures*, *cultural mediation* as central forms of labor that characterize the work of CHWs.

4 Results

CHWs consistently described going far beyond their formal job descriptions to fill critical gaps in a healthcare system that often fails to meet the needs of the communities they serve. While their official roles may focus on healthcare, CHWs are routinely called upon to address a wide range of challenges, many of which fall outside the traditional boundaries of medical care. Their work often spans emotional support, advocacy, education, crisis intervention, and even basic caregiving.

4.1 Everyday Interventions

CHWs serve as educators, advocates, navigators, and community organizers, filling critical gaps in a healthcare system not built for the populations they serve. Their work is especially vital for refugees managing chronic conditions like diabetes, many of whom struggle to understand the purpose and importance of their medications. PM mentioned, “I have five different patients who don’t take insulin because they don’t get it.” Diabetes, she added, is becoming a silent epidemic. Health education should reflect the lived realities of the communities it serves. For instance, diabetes management can be taught using culturally familiar foods by asking, “Is the lamb you’re eating lean or fatty?” or by showing images of typical rice portions to illustrate healthy serving sizes. Such an approach that is culturally and contextually relevant would be far more effective than using a single, uniform approach for all communities.

Nutrition education is a central aspect of the CHWs job profile. CHWs frequently accompany clients to grocery stores, where

they decode food labels, explain ingredients, and help clients make healthier choices. “Juice is considered healthy,” one CHW noted, “but they don’t realize how much sugar is in it.” Even everyday moments, like standing in front of shelves filled with different types of milk can become opportunities for impactful education.

The structure of the U.S. healthcare system poses significant barriers for the refugees. In many of the countries CHWs and their clients come from, a patient can walk into a clinic and ask to see a doctor, often without a prior appointment. In contrast, the U.S. system requires not only an appointment but also insurance information before care can be provided. Patients without insurance or an appointment are often redirected to urgent care centers or emergency rooms (ERs). However, urgent care centers offer only limited services, and for anything more complex, patients are referred either to their primary care physician or the ER, where wait times can stretch for hours due to chronic under staffing [36].

In their day-to-day practice, CHWs assist clients with tasks such as updating documentation, applying for public benefits, preparing for medical and immigration appointments, arranging transportation, picking up prescriptions, and explaining how and why medications should be taken. For instance, one CHW I shadowed helped a disabled client apply for food assistance. Because the client was too ill to leave home, the CHW made multiple trips to collect documents and submit the application, ultimately securing approval on the client’s behalf.

Home visits are an essential part of how CHWs work. These visits go far beyond check-ins and often include delivering food or other critical supplies. One CHW described this dynamic: “I have 25 official clients, but unofficially, I have a lot more because I deal with every single kid in the family as well.” A CHW supporting a pediatric patient may spend more time helping the child’s mother or older sibling. A visit to drop off diapers might evolve into an impromptu health session with neighbors who have gathered to ask questions. These informal, often invisible interactions extend the reach and impact of CHW efforts, even though they rarely show



Figure 1: This journey map consolidates the responses from all the participants

up in the official data. As one CHW reflected, “It has a lot of potential for impact.” These responsibilities only intensified during the COVID-19 pandemic. With food insecurity and supply shortages on the rise, CHWs packed their cars with essentials like food, diapers, hygiene supplies and made direct deliveries to ensure their clients’ basic needs were met.

CHWs are also frequently thrust into crisis response roles, navigating urgent and often ambiguous situations. In such moments, CHWs do what they can, but are often left feeling frustrated and emotionally drained due to the lack of available resources and systemic support. Despite this, they continue to show up, finding ways to advocate and intervene. One CHW, PM recounted a case involving a client with severe psychosis who refused treatment, saying, “I’m praying to God to do something with my health.” PM struggled to determine the most appropriate course of action—emergency room, urgent care, or a specialized mental health service. The situation triggered a flurry of messages among CHWs, as they collectively sought the safest solution. PM reflected, half-jokingly that “In [my country], we’d tie her arms and legs, give the injection, and she’d feel better.” But U.S. law requires informed consent for all medical treatment, even in cases of severe mental illness. After many hours and coordinated effort, the client was eventually admitted to the hospital. Reflecting on the incident, another CHW, LH, asked: “When someone is not in their right mind, what is free will?”. The issue of free will, “makes it harder to provide people with the care they actually need.”

This ethical tension between respecting autonomy and addressing acute need underscores a broader systemic challenge. CHWs are often left to navigate these gray areas without clear guidance or institutional support. Their experiences point to the need for policy-level attention to the legal and ethical frameworks that govern care, especially for vulnerable populations with limited capacity to advocate for themselves.

4.2 Trust Infrastructures

CHWs build their work on a foundation of trust, cultural understanding, and a deep commitment to their clients’ well-being. This trust is not incidental, but is central to everything they do. Clients, worried that clinics may lack interpreters or cultural sensitivity when trying to contact them, often list their CHW’s phone number as their primary contact. As a result, CHWs sometimes receive appointment reminders without knowing which client the message is intended for. When they call clinics to clarify, they often encounter barriers due to HIPAA⁵ regulations, which prevent clinics from sharing patient information.

Communication is further complicated by clients’ inconsistent access to mobile phones or data plans. Phones are often shared among family members, which can make direct communication difficult. In these situations, CHWs prefer to visit clients in person. While platforms like WhatsApp and Facebook Messenger are frequently used to maintain contact, they present risks to HIPAA compliance, especially when CHWs can’t be certain who is using the device on the client’s end. CHWs also have to ensure that clients don’t share any of their sensitive information via these platforms. One CHW mentioned “They don’t know who they should share their personal information with. It has caused some issues. You’ll hear comments like ‘You’re the only one who knows my Social Security Number’”.

To mitigate these risks, CHWs rely on strategies such as using non-identifiable or vague language in messages. One CHW described calling the client first to confirm details verbally, and then texting a generic appointment reminder that omits any personally identifiable information. Others set personal calendar alerts a few

⁵HIPAA stands for Health Insurance Portability and Accountability Act. Passed in 1996 HIPAA is a federal law that sets a national standard to protect medical records and other personal health information in the United States of America.

days in advance of the appointment to follow up, send reminders, and arrange transportation if needed.

In some cases, CHWs create WhatsApp group chats with clients to share information broadly. These group settings not only allow CHWs to efficiently disseminate updates but also foster trust among new clients. When a new client sees a CHW actively engaging with others in the group, and sees others trusting them, it can ease their own hesitations and reinforce the CHW's credibility. These group chats have thus become not just tools for communication, but also important spaces for building and reinforcing trust.

The flip side of gaining such trust is that it can lead to unrealistic expectations. One CHW lamented that "There is confusion about what the CHWs roles is. Once the trust is built, then it can go to unrealistic expectations about what the CHWs can do for them, what hours they're available and how they can solve all their problems". PM said she has stopped bringing her phone into the bedroom to give herself a break from the constant messages and calls.

CHWs are therefore careful not to create dependency. Instead, they focus on empowerment by teaching clients how to navigate unfamiliar systems and environments. As one CHW put it, "One way to help our community is by teaching them how to do it themselves. We can go with them or call for them once or twice, but showing them how to do it is the real help." This ethos of capacity building is often expressed through group discussions organized at community hubs like churches. Topics are shaped by the community and span issues such as anger management, domestic abuse, and cultural adjustment. These gatherings often include prayer, icebreakers, and shared meals, creating opportunities to learn and build solidarity.

4.3 Cultural Mediation

Refugees arriving from more paternalistic societies often face deep cultural dissonance as they adjust to American norms, particularly around gender roles and women's autonomy. One CHW reflected on this shift: "In Africa, the head of the household is the man. When he comes here, things change totally. Here, they value women more, and sometimes women won't listen to the man in the house...these are feelings patients don't always express directly, but you can tell they're struggling with them."

Beyond cultural adjustment, many refugees are also unaware of the benefits available to them, like healthcare coverage, WiFi assistance, or transportation services, and rely heavily on CHWs and public libraries for guidance. Yet, even when CHWs try to access these resources, they often encounter bureaucratic obstacles. One CHW, who also worked at a library, recalled a call from a client seeking free transportation to a COVID-19 vaccination site. The application form asked for a Social Security Number (SSN), which the client did not have. This left the CHW feeling powerless and frustrated, unable to help, while the client was left disappointed and vulnerable, unable to access a critical vaccine for themselves and their family.

Refugees are grappling not only with the trauma of displacement but also with the daunting task of navigating an unfamiliar and frequently unwelcoming healthcare system. As part of the journey mapping exercise, CHWs used words like overwhelmed, anxious, frustrated, depressed, disconnected, irritable, helpless, abandoned,

confused, scared, angry, and worried to describe how their clients felt (as reflected in Figure 1). It was not uncommon for clients to break down in tears or express distress through anger or shouting.

Language barriers and unfamiliarity with the healthcare system only deepen these challenges. Many clients are hesitant to visit hospitals alone, afraid they won't be able to communicate or understand what was happening. "Even when they go to the hospital, they don't know where to start because it's totally different from what they're used to," one CHW explained. This confusion often leads to heightened anxiety, and in some cases, spikes their blood pressure. "Even if they get there, they get stuck due to language barriers. All this makes them confused and worried."

Some clients insist that CHWs accompany them to medical appointments, not only to interpret but also to provide emotional reassurance. One CHW, CT, recalled a case in which a client was discharged late on a Friday evening after surgery without any pain medication. CT remained with the client for hours, advocating with hospital staff and pushing for a solution. At one point, she was even advised to take the client to the ER just to obtain the necessary medication, which was an infuriating and inefficient workaround. CT refused to give up, and after persistent efforts, was finally able to reach the surgeon directly and secure the appropriate prescription.

GH has observed a noticeable increase in clients experiencing symptoms of psychosis since the onset of the COVID-19 pandemic. The healthcare system, and the CHWs themselves, are struggling to meet the growing demand for mental health care. These challenges are especially acute for refugee clients, for whom language barriers and cultural stigma around mental illness create additional layers of difficulty. Intensive outpatient programs and day treatment facilities often lack the resources to provide interpretation services throughout the day, effectively excluding non-English-speaking clients.

There is an urgent need for more culturally responsive and linguistically accessible mental health care. CHWs have consistently emphasized the importance of training that equips them with practical tools to identify and respond to mental health crises. One CHW recounted the isolating experience of being the only Swahili speaker in a room full of English-speaking professionals during a mental health emergency, which was not only alienating for the CHW, but devastatingly disorienting for the client. During the session, CHWs expressed the need for targeted training and professional development that directly addressed the barriers they encounter in the field, such as difficulties navigating healthcare systems when helping clients access hospital care.

5 Discussion

5.1 The Resettlement Work of Community Health Workers

Resettlement Work is primarily carried out by a range of intermediaries who may be formally designated as CHWs, case managers, social workers, Accredited Social Health Activists (ASHAs), or other roles. These intermediaries often straddle formal and informal institutional boundaries, engaging in both policy implementation, everyday work, and crisis management. I use the term *Resettlement Work* to conceptualize the diverse and multifaceted forms of invisible work involved in the process of resettling refugees within

their host cities. This work encompasses not only the logistical and bureaucratic procedures of relocation, but also the ongoing emotional, relational, and improvisational labor required to navigate and mediate complex social and institutional terrains [37, 57, 67].

Such work is inherently complex and nonlinear. It occurs across local, institutional, and transnational levels, and in many directions, often requiring coordination between government agencies, NGOs, local communities, and displaced individuals themselves. The nature of Resettlement Work demands ongoing adjustment in response to emergent conflicts, competing priorities, and unforeseen challenges. Rather than being a stable or predictable process, resettlement work is marked by continual negotiation, adaptive decision-making, and what some scholars have referred to as “workarounds” or “tinkering” in frontline welfare labor [22, 30, 47].

Resettlement work, articulation work, and infrastructure work are closely related but conceptually distinct forms of labor. Resettlement work refers to the broad, multifaceted, and relational labor that CHWs undertake to support refugees in rebuilding their lives after displacement. This includes not only navigating healthcare systems, but also securing housing, accessing education, applying for public benefits, and fostering cultural acclimation. It is improvisational, emotionally demanding, and spans multiple life domains, often involving trust-building, advocacy, and context-specific problem solving. In contrast, articulation work, as theorized by Strauss and colleagues [20, 61], focuses on the invisible coordination necessary to align tasks, people, and resources so that broader institutional work can proceed. It is the “work that makes other work possible,” involving contingency management, information flow, and the synchronization of actors across time and space [20, 61]. For CHWs, articulation work might include coordinating transportation, interpretation services, and clinic appointments to ensure their clients receive appropriate care. Meanwhile, infrastructure work refers to the maintenance and adaptation of sociotechnical systems, including physical, bureaucratic, digital, and human components, that make ongoing care delivery possible [21, 60]. This can include sustaining communication channels (e.g., WhatsApp groups), building referral pipelines, or developing culturally relevant documentation systems.

CHWs don’t just align broken infrastructures, they fill in for them, care within them, and create pathways where none exist. It is not only about keeping systems running or tasks aligned, it is about helping displaced individuals reassemble life itself under precarious and often exclusionary conditions. Resettlement work often includes both articulation and infrastructure work, and extends beyond them by foregrounding the affective, moral, and socially situated labor CHWs perform to help refugees navigate life in their host societies. Understanding these distinctions is crucial for recognizing the full scope of CHW labor in refugee resettlement contexts, for designing care infrastructures that can adequately support their multifaceted roles.

5.2 Designing Care Infrastructures to Support Resettlement Work of Community Health Workers

Designing care infrastructures to support the resettlement work of CHWs requires intentionally creating sociotechnical systems that

recognize, sustain, support, and strengthen the multifaceted labor CHWs perform in helping refugees navigate life in a new country. This goes beyond building tools or services. It involves reimagining how care is organized, resourced, and valued, especially within under-resourced and culturally complex environments.

Designing technologies for community health without centering the lived experiences and expertise of CHWs risks reproducing extractive, top-down approaches that echo longstanding center–periphery dynamics, in which knowledge, tools, and systems flow from powerful centers, often in the Global North or urban, institutional settings, to the periphery, where they are expected to be adopted without question or adaptation [39]. In such paradigms, CHWs are positioned as passive recipients of systems designed elsewhere, rather than as active contributors with deep, situated knowledge of care work. A decolonial design approach challenges this imbalance by recognizing CHWs not only as users but as co-creators and theorists of care, whose insights can reshape what technologies are developed and how they are imagined. By involving CHWs in the design process, researchers and practitioners can ensure that care technologies are not only more usable but also more just, attuned to the lived realities of frontline care, responsive to local infrastructures and values, and capable of supporting CHWs’ efforts to survive, resist, and advocate within systems that are often structurally inequitable and historically extractive [23, 37, 67].

The findings presented here point to two key strategies for co-designing care infrastructures with CHWs. First, they highlight the importance of *centering the everyday lived realities of CHWs*, particularly the constraints and informal practices that structure their work. Second, they call for an intentional *prioritization of cultural and linguistic needs*, not as add-ons, but as foundational to ethical design. Rather than treating participatory engagement as a one-time requirements-gathering exercise, these strategies recognize the ongoing, complex, and nonlinear nature of care and resettlement work. They demand a design process that is relational, iterative, and grounded in the experiences of those at the margins, thereby moving beyond inclusion toward a genuinely situated and care-centered response. I briefly discuss each of these strategies next.

5.2.1 Centering the Everyday Realities of CHWs. CHWs are frequently operating in a mode of perpetual crisis response within environments characterized by resource scarcity, institutional fragility, and limited infrastructural support. The cumulative toll of such labor often goes under-recognized and undervalued, which places significant strain on the mental, emotional, and physical well-being of CHWs and similar intermediaries. This reality calls for a re-evaluation of how we conceptualize and assess the success of resettlement work. It compels us to move beyond narrowly defined outcome metrics and instead attend to the processes and labor that sustain such efforts on the ground. For instance, instead of thinking only about the number of refugees resettled or their employment numbers, we need to consider ways to measure their overall quality of life of both the CHWs and their clients. Supporting this requires systems that are flexible, context-aware, and relationally sensitive to their everyday realities. In doing so, we must also foreground the ethical imperative of care for the displaced populations and

for the CHWs whose everyday labor makes resettlement possible [22, 23, 28, 29].

While participatory design scholarship offers numerous examples and frameworks for engaging marginalized populations, the distinctive legal, health, and geopolitical challenges that CHWs navigate daily call for creative adaptation of these methods. Meaningfully engaging with the lived realities of these communities requires not only drawing on existing PD approaches but also reconfiguring them to account for the complex contexts in which CHWs operate.

5.2.2 Prioritizing of Cultural and Linguistic Needs. Language barriers can impede effective communication between CHWs and refugee populations. Since CHWs often serve as cultural mediators for refugee communities, care infrastructures must reflect diverse cultural logics, practices, and expectations around health, family, and gender [2]. This might include multilingual platforms, culturally contextual health education materials, or decision-making tools that align with local norms. Tools like ChatCHW [35] and ASHABot [49] leverage LLMs tailored to local clinical protocols, offering region-specific guidance and simplifying decision-making, thereby bolstering CHWs' autonomy and confidence in care delivery. Initiatives like Tarjimly [1] that leverage AI to enhance translation services for less-represented languages can facilitate better understanding and support for refugees during critical interactions.

While AI and LLMs offer significant benefits, it is crucial to position these technologies as supplemental tools rather than replacements for human oversight. Ensuring that CHWs have access to supervisory support and maintaining ethical standards in AI deployment are essential to prevent over-reliance on technology and to uphold the quality of care provided.

6 Conclusion

Refugee resettlement is a deeply human, ongoing process that unfolds through countless acts of care, improvisation, and mediation. This article has illuminated the vital yet often invisible labor of CHWs in supporting refugees as they navigate this transition. Through the concept of Resettlement Work, I have sought to foreground the relational, emotional, and infrastructural practices that CHWs mobilize daily. These practices that are essential to the well-being and integration of refugee communities but remain largely unacknowledged by dominant health and social systems.

Recognizing CHWs as architects of trust and navigators of fragmented healthcare infrastructures calls for a fundamental rethinking of what care infrastructures are and who gets to shape them. This perspective challenges the center-periphery dynamic that often characterizes refugee resettlement efforts, and instead advocates for approaches grounded in the everyday lived experiences of CHWs and the communities they support. Rather than positioning CHWs as peripheral or supplemental actors, this study emphasizes their central role in the resettlement process. Designing with CHWs and valuing their experiential and cultural knowledge is not only an issue of justice, but also a necessary step toward building care infrastructures that are more responsive, equitable, and sustainable for displaced populations.

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Participatory Design through the Lenses of Women Architects and Designers

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Abstract

This paper explores the professional practices of women architects and designers, focusing on participatory design as a pathway toward more inclusive societies. Based on twelve in-depth interviews with professionals across Europe and South America, the study highlights how women in these fields navigate their experiences while advancing design practices grounded in inclusion, accessibility, and social responsibility. Through thematic analysis, the research identifies key competencies for participatory design. It also discusses the ethical and political dimensions that shape women's contributions to co-design. The study reveals challenges such as invisibility, conflicting professional and personal roles, and systemic bias. This paper amplifies voices that are often under-represented in architecture and design discourses. The findings offer insights for rethinking design and architectural education and practice to support equity and recognize the transformative role of these practices.

CCS Concepts

• **Social and Professional Topic;** • **Accessibility;** • **User Characteristics;**

Keywords

Women Architects, Women Designers, Participatory Design, Inclusive Societies

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1 Introduction

Participatory design has emerged as a significant field of activity for women architects and designers, who design with a focus on building inclusive, fair, and sustainable societies. In areas that are predominantly represented by men, such as architecture and design, the growing female presence has been rebuilding professional practices. Women seek recognition for their practices and avoid gender labeling in their professions. However, as highlighted by MacManus and O'Donnell [1], structural barriers are still present in their daily lives, as they do not meet the required standard of the “ideal worker” - someone who dedicates themselves exclusively to their professional role, without occupying multiple roles that are performed by many women.

Their growing influence not only challenges traditional professional norms but also aligns with broader societal demands for more inclusive, resilient, and human-centered products, services, systems, and environments. Proposing to build on the principles of inclusion, justice, and sustainability requires a deeper understanding of the complexity of the current needs of urban life.

However, gender is not the only aspect that deserves attention. Inequalities emerge in an intersectional way, encompassing not only gender but also race, class, and geographical location. Drawing on the works of Crenshaw et al. (2019) and Collins (1990), this paper explores how these social dimensions shape lived experiences, political subjectivities, and professional practices of women in the fields of architecture and design [2] [3].

The timeliness and relevance of this investigation are presented as explained by the United Nations in Goal 11 of the 2030 Agenda, it is necessary to transform cities. The need for significant changes aims to achieve inclusive cities and human settlements, which guarantee resilience, security and sustainability [4]. In response to the break with current city standards, new ways of designing are called for, as well as new actors to be part of this construction. Furthermore, UN Goal 5 presents the gender equality agenda, which aligns with the professional scenario in the areas of architecture and design, encouraging the visibility of women's professional practices. From the perspective of new ways of designing cities and new actors as participants in this process, co-design stands out as a

tool that calls for diversity and makes room for different realities and knowledge, in an equitable, non-hierarchical way.

Although there are contributions in the literature regarding the potential of participatory design, as well as evidence of the inequalities faced by women in the fields of architecture and design, few studies connect these aspects. This research seeks to bridge these gaps by examining the narratives and strategies of professionals who navigate multiple forms of marginalisation. In doing so, it explores how their intersectional experiences enrich co-design approaches, engaging diverse actors in the process of questioning the status quo of architecture.

In this regard, the study is guided by the following questions: i) How do the intersectional experiences of women architects and designers shape their professional practices? ii) What strategies do they develop to challenge structural barriers within their fields? iii) In what ways can their practices provide new pathways, involving a variety of actors in the deconstruction of the identified inequalities? This research explores the inclusion of multiple actors and contexts in design and architecture. It presents participatory design and co-design practices based on women's narrative. It contributes to the pluralization of voices that historically construct discourses and practices in the areas of architecture and design, which are mostly marked by male figures.

1.1 Participatory Practices in Architecture and Design field

The present study focuses on professional practices in architecture and design from the perspective of participatory design. Participatory design is a political concept, as it seeks to understand the impacts of end-user participation in the design process, paying attention to how design practices are enhanced through active user involvement [5]. Within this field, the concept of co-design refers to the process of co-creation applied to design, which involves designing with multiple actors. In this approach, the hierarchical position of creation is dismantled, recognising that non-experts, when encouraged, demonstrate creative potential, with the premise that the user is a key actor in the creative process [6]. Co-creation, in turn, refers to the collaborative process itself, in which people come together for creative generation [6]. These concepts are discussed in this study and have been increasingly applied in practice, with the potential to foster social innovation. Manzini (2015) states that “an expansive open co-design process in which new solutions are suggested and new meanings are created” [7].

Participatory design plays a key role in amplifying the plurality of voices involved in design processes. Based on collective formations, it prioritizes the diversity of singularities. Through specific methodologies and tools, it encourages critical reflection and emerges as a political act, by advocating for the inclusion of people historically excluded and rendered invisible by society [8]. With this ethical commitment, participatory design contributes to the creation of more just and inclusive spaces [9].

Therefore, participatory practices are oriented towards society, often emerging through community-based initiatives. They are deeply related to issues of inequalities, in their environmental, gender-related, and income characteristics [10]. In this sense, participatory design has implications for important movements and

concepts, such as decolonization [11]. Respecting the cultural characteristics of each territory becomes an essential premise, breaking with colonial practices.

This commitment to equity also entails rejecting exclusionary and productivist logics in favour of shared care and collective well-being. In this way, participatory design proposes moving away, seeking common care, in order to meet contemporary challenges: social, political, and environmental [11]. Furthermore, given the needs of contemporary urban life, such as well-being, resilience, and urban happiness, participatory design practices offer strategic approaches to contemplate these characteristics by including the inhabitants of the territories in the resolution of emerging problems [12].

In this sense, there is a democratization of who can participate in creative processes. The exclusivity of specialized design, done only by professionals, is questioned, giving space to the multiplicity of knowledge. Manzini [7] presents this panorama, highlighting the potential of design to support sustainable transitions and foster social innovation.

Consequently, participatory design also intersects with feminist perspective, particularly when reimagining urban spaces through a gender perspective. This connection is clearly expressed in the professional practices of female architects and designers, who contribute not only through their professional expertise but also by integrating their subjective experiences, enlightened by their gender. Their practices enrich participatory processes and challenge dominant norms, reinforcing the transformative potential of design grounded in care, inclusivity, and social justice.

Although participatory design is grounded in principles of plurality and inclusion, the realities experienced within the field often reveal contradictions. Ideals of equity coexist with gender and sociopolitical disparities that affect professional recognition and participation. Therefore, examining the experiences of women architects and designers is essential to understanding how structural barriers operate and how they can be confronted. Within their own professional practices, one can observe acts of resistance by women architects and designers against a context still marked by patriarchy.

1.2 Challenges Faced by Women Architects and Designers

Women have faced challenges since they first began to train as architects and designers. For decades, they were excluded from access to higher education and, even after gaining entry, they were considered a minority in architecture and design courses. In Spain, for example, women only achieved equal enrollment in architecture courses in 2007, when they reached 50% of enrolled students. In 1980, they accounted for only 15% [13]. The first students in these areas of activity belonged to privileged socioeconomic classes. As evidenced by the participants in the study by Agudo Arroyo and Madariaga [13], access to university belonged to the so-called middle and upper social classes. Thus, the beginning of women's entry into the fields of design and architecture was marked by elitism.

With the democratization of access to higher education, there was a pluralization of people and social realities in the university context and, later, in the job market. Today, female designers and

architects have built professional careers that differ from traditionalism, presenting characteristics of autonomy by seeking different work trajectories that do not resemble the “ideal worker”. Among these practices is the choice for flexibility and autonomy at work, adopting part-time workdays, in opposition to capitalist demands for productivity [14].

When working in unconventional ways, professionals face invisibility or labeling based on stigmas associated with gender roles. Discussions about reconciling women’s maternal role with their professional role are frequent. The naturalization of this labeling leads to the inference that prioritizing flexibility in relation to working hours is connected to the role of motherhood, for example. However, when we look at Caven’s study [14], which investigated this relationship, there were many female architects interviewed who opted for more flexible work arrangements, and they were not mothers.

Socially, although women have been “authorized” to pursue professional careers, the expectation that they conform to patriarchal norms persists. The culturally constructed associations between the figure of women and gender roles are still present. The naturalization of these preconceptions acts to limit professionals, with stigmas being directed at them, which raises questions about the freedom of action of female architects and designers in the job market. An example of this is the way in which professionals are associated with practices that symbolize domesticity, while men occupy roles related to power, such as leadership positions [13].

Furthermore, violence remains present even in so-called “egalitarian” societies. Caven, Astor, and Urbanavičienė [15] present this scenario in Lithuania, in a context in which 48% of architecture professionals are women. The study highlighted several types of violence, such as moral harassment, discrimination, and exclusion of women in decision-making. The panorama presented shows that the difficulties faced in the profession are not justified by the proportion of women working in the field, but by the marginalization of these professionals through the maintenance of patriarchal logic.

Thus, the analysis of their experiences makes it possible to understand how gender continues to influence trajectories, choices, and participatory practices within the field of design and architecture.

2 METHOD

An exploratory approach was used in this study, encompassing a literature review, followed by semi-structured interviews. Twelve women architects or designers were interviewed based on their professional profile. The sample was non-probabilistic chosen by convenience. To guarantee the anonymity of the interviewees, they were identified as Interviewee 1 (I1), Interviewee 2 (I2), Interviewee 3 (I3), and so on.

Of the professionals interviewed, 66.66% are architects and 33.33% are designers. On average, the participants have approximately 22 years of professional experience, considering their trajectories after completing their academic training. The professional with the shortest experience has an 11-year career, while the most experienced one has been working for 33 years. Regarding the nationality of the women participating in the study, the majority are Irish (33.33%), followed by Italian (25%). Countries such as Brazil (16.66%), France (8.33%), Scotland (8.33%), and England

(8.33%) were also represented, reflecting the geographical diversity of the interviewees.

Of the 12 professionals interviewed, 11 currently work or have previously worked as educators. The interviews were guided by questions focused on the fundamental principles that shape the interviewees’ work, as well as their perceptions of the expected impact of their projects on the community. The study explored the creative process, co-creation, and social inclusion, with practical examples from the projects in which the participants are involved. Attention was also given to the inequalities faced by the interviewed professionals, with the aim of identifying strategies to address the obstacles encountered.

We recorded, transcribed, and tabulated the interviews to subsequently perform a thematic analysis [16]. The themes were defined based on the interviewees’ statements and remarks. Two thematic groups were consolidated: i) Foundations of Participatory Practices, encompassing the ethical, cultural, and transdisciplinary competencies that underpin participatory design; and ii) Embodied Knowledge: Gender and Transformative Practice, which addresses how gendered experiences shape and transform participatory design approaches.

3 RESULTS

This chapter presents the main themes that emerged from the interviews, highlighting how women architects and designers engage in participatory design practices. Rather than offering a general account of participatory methods, the focus is on the lived experiences of the women interviewed in this research, whose work challenges dominant paradigms. Their voices show how participatory design is not only a method but also an ethical and political stance that contests historical exclusions, values multiple forms of knowledge, and fosters inclusive environments.

Thematic analysis of the interviews revealed a progression of interconnected themes that shape how women architects and designers engage with participatory design. These themes are organized across two sections. The first (3.1) addresses the foundational competencies and ethical values that underpin participatory design, as expressed by the interviewees. This includes competencies such as empathy, openness to cultural diversity, transdisciplinary collaboration, and a commitment to designing with and for multiple actors, including those often excluded from design processes. These insights also show how such values are introduced into academic contexts and the resistance they can face within traditional curricula. The second section (3.2) shifts focus to the embodied and gendered dimensions of professional practice. It explores how women’s lived experiences, including exclusion, caregiving responsibilities, and systemic bias, influence their design approaches and catalyze transformative, inclusive practices. Together, these sub-chapters offer a layered understanding of participatory design as both a set of competencies and a political-cultural stance shaped by gendered experience.

3.1 Foundations of Participatory Practices

The following insights into participatory design practices emerge directly from the lived experiences of women architects and designers, whose narratives highlight not only the foundations of

these practices, but also ethical and inclusive values shaped by their positions within the field. These foundations are the essential competencies that collaborative design needs to help make societies more equitable, accessible, and fair. Other foundations are also presented in participants' statements, in order to understand the practices that resulted in the current structures and ways of thinking.

First, when addressing the competencies that underpin the professional practices of the interviewees in conducting participatory design processes, attitudes, abilities, and knowledge were identified. The need to have multicultural knowledge was highlighted, given the differences that arise in different cultures and the globalization that we are experiencing. Being immersed in different cultures was seen as essential to practicing co-design in a truly inclusive way. It is therefore about understanding differences, embracing what is unknown to us, and to this end, the attitude of exposing oneself to differences was highlighted, explained in the statement "I think that the simple fact of being exposed to many cultures contributes to a more inclusive approach" (I7).

From this perspective, participants observed that there is no single recipe for how to carry out participatory design, and that the result of collaborative work cannot be deliberately generalized. It is necessary to understand the uniqueness of each project, of each user, of each context and culture involved in the design process, in a situated and politically implicated practice. This positioning opposes the concept of universal design, as criticized by one of the interviewees: "We really believe that universal design is kind of impossible, actually. We go through this paradigm to find a unique solution, replicable everywhere [...] it is necessary to conduct research situated in the ecosystem of actors involved, which is always specific" (I6). And to work in this context, the need for empathetic skills, as well as flexibility and group work was emphasized (I8).

In addition to expanding cultural knowledge, the need for an understanding of the diversity of actors involved in a creative intervention process was highlighted. This reflects the transdisciplinary nature of participatory design practices, which, once embraced, tend to become a guiding principle in professional practice. As evidenced in interview 1, after practicing co-design and realizing its potential, not considering it in one's practices becomes incoherent: "I can't think of architecture and urban planning projects that aren't transdisciplinary" (I1). Transdisciplinarity, expressed through co-creation with different actors and their diverse knowledge, aims to make public spaces, that is, accessible to everyone: "We need to work together to make everyone use the space. So, the space has to be public. The word public has to be in essence, right? In the sense of touch. So, that's what I hope, that we can think and design together so that communities don't stop using the space" (I1).

Consequently, the reflection is woven on the importance of expanding knowledge about who is considered the end user. In participatory design, according to the perception of the interviewees, the place of the client is not occupied by just one figure. As exemplified in interview 11, "my client is all these creatures and the materials that you are using. You can extend that to the outside, the wind, the sun and the rain". This perspective is complemented by the ethical positioning of considering architecture and creative design practices as being for everyone: "And I suppose the ethos behind that was that architecture should be for everyone [...]. And

more recently, that extends to what we could call radical inclusion, perhaps, but it is a human and more than human approach. And that refers to the challenges of climate change" (I5). Therefore, a conception of social and environmental responsibility is observed, which is summarized in an ethical practice.

This dimension of ethical attitude appears frequently, explicitly and implicitly, in the reports of the participants. It also appears as a definition of professional design practice in some narratives: "lately I have been talking about my work as ethical design, not just inclusive design. So, I have been dedicating myself a lot to sustainability" (I3). From this, it is clear that participatory design is based on the assumption of exercising critical thinking skills (I9), also presenting itself as a methodology. In this context, general listening emerges as an essential competence, since it "creates conditions for place and people, policies, resources, can emerge and speak" (I12).

In view of this panorama, another important foundation to be nurtured, according to the experiences of the professionals, is the implementation of these competencies (in terms of knowledge, abilities, and attitudes) in professional training. The interviewees spoke about their experiences as professors, reiterating the importance of professional training in architecture and design to present a consolidated basis regarding inclusive practices, such as participatory design. This attitude is seen as a "social responsibility, to provide skills on inclusion, on inclusive design, for students" (I8). The professionals approach the topic in practice with students, with the aim of introducing "co-design to work with real people and solve real problems [...] I work with students from the first year" (I10). Despite the positive reports regarding the introduction of these contents in academic curricula, difficulties are still observed, such as the students' preconceptions regarding traditionalist design, criticizing design as critical thinking, "students say that this is not design" (I9).

In view of this complexity, the need to revisit the historical foundations of design and architecture reverberates. Understanding the foundations that have supported these fields until today allows for critical reflection and a changing attitude. Thus, it is understood that "first of all, it is about introducing topics that promote reflections on these themes, for example, gender prejudices. [...] So, I think we need to start thinking about the forces that shape design, we also need to talk about patriarchal systems" (I9). And, to achieve this, it takes time, it is a process. The training process is not limited to providing knowledge and students integrating it, but it is necessary to practice it (I6). And, in this sense, co-design is an educational approach, in addition to intervention. Together, these reflections illustrate how women in design and architecture are not only applying participatory methods but also reshaping them, grounding the field in more inclusive, situated, and ethically conscious foundations.

3.2 Embodied Knowledge: Gender and Transformative Practice

In fields historically dominated by men, it is important to observe women's experiences and give them a voice. In this research, it was

possible to observe challenges and strengths inherent to the condition of being a woman and the complexity that this reverberates, which are discussed in this section.

This complexity was not constructed in the present day but rather occurs as a historical condition. As one of the interviewees rightly points out, women lived for many years without the right to vote, without the right to move around in public spaces, to have assets or even to choose to remain married (I1). The persistent denial of rights over the years contributed, in a certain way, to an image of “no power”, which has been deconstructed by the actions of several women - among them, women protagonists in architecture and design.

However, the interviewees reported that women’s experiences in these areas are not always validated, welcomed, respected and valued. This begins with the professional training of these women, who, upon entering the job market, do not find other women working there. This scarcity leaves a gap in identification - “my training was mainly with men” (I3). The absence of female role models was a recurring theme: “there was no female director in practice” (I3); “I had a kind of mentor in the office where I worked [...] she was the only woman on the board of that office” (I4).

From this perspective, it is worth reflecting on the different roles that women occupy. The difficulty of reconciling professional activities with personal needs, such as maternal/family care, is highlighted. There are clear perspectives regarding career decisions being guided by reflection on how the decision will impact the professional’s family: “the first choice I need to think about is whether this is good for my family, not necessarily for me” (I10). In view of this, even with the increase in women studying architecture and design, and with the perception that self-employment is significant in these areas, which could favor women (I10), “when you move up in your career, you see more men” (I7).

Furthermore, when women achieve professional integration, their voices are silenced in various contexts. In the context of teaching, a significant difficulty was noted: “the main challenges I have faced so far as a woman were the challenges as a professor in academia [...] my voice as a woman was not taken into consideration” (I9). It is reflected that it is not just a professional condition in which women are having to build their spaces, but multiple spaces are being reconstructed based on women’s experiences. In project leadership, the invalidation of authority is noted, expressed in one of the statements: “I had difficulties with men younger than me, when I was in a higher position in the hierarchy” (I7).

When professionals experience these challenges, many respond by initiating change through participatory design. They position themselves as catalysts, recognizing that the issues they encounter are not isolated, but affect broader communities. As one interviewee reflected: “Ok, this cannot be from my point of view, I could no longer ignore this [...] I started working on these topics” (I9). Thus, projects emerge aimed at including female skateboarders in spaces occupied mostly by men, proposing safer streets for women victims of domestic violence, developing accessible urban spaces for kids, disable, and elderly people, prototyping university environments that welcome everyone, such as neurodivergent students, and many other projects that these interviewed women have led.

The participatory initiatives these women have led highlight the multiple roles they assume in design processes. Among them, “the

role of women in demonstrating the quality of the work that is carried out through active listening, through highly targeted, objective, well-thought-out actions, addressing the dilemmas that arise” (I1) stands out. According to the interviewees, there is greater care with the multiple actors involved in the creation processes, paying attention to the impacts of projects and interventions, given that women seem to be “more in tune with health, not only of human beings, but with the health of the planet and the health of other creatures with whom we share the planet” (I11). According to the experiences reported, women’s sensitivity in welcoming and empathetic listening reverberates positive results in the participatory design process, given that users feel welcomed and share their authentic experiences. This perception is summarized in the following quote: “because the idea of care, the welfare-based idea that women have of how to approach, how to deal with the problem, ends up becoming clear in the stages [of the co-participatory projects]” (I1).

However, it is worth reflecting that women experience insecurities and challenges in their professional practices, highlighting the difficulties linked to gender. One of the interviewees explains that cities are not safe for women - “all my work is done in groups. No female architect goes alone. Mainly because all the places are kind of threatening, right?” (I1). Thus, the very way of acting, visualized in the experiences of these women, reflects the reality and the need for intervention so that we have safer and fairer societies for all.

For decades, people experienced urban spaces that were designed by men and, when we looked critically at them, realized that “the cities that were made by men [...] they do not give free access to all” (I1). Engaging with cities also means engaging with the unique experiences of those who inhabit them, recognizing that “one thing is the journey of women, another is the journey of men (I12).” Therefore, women have contributed a new position to project and co-create from an empathic listening. This, part of the premise of the inclusion of different voices: “She tries to listen, she tries to make negotiations between these voices, she tries to be mediator” (I1). From this mediating stance, a broader range of needs is considered, and cities are envisioned through a lens of plurality. Designing from personal experience, then, becomes more than a singular act — it opens space for collective inclusion. It is in itself a political gesture: an effort to make spaces inclusive and equitable. Perhaps, from these practices, we can glimpse the day when it will be safe and accessible - to everyone - to move through cities.

When analysing the participants’ narratives, it becomes clear that territory emerges as a dimension that permeates their professional practices, influencing the possibilities for action and social transformation. From an intersectional perspective, one interviewee reflects on the presence and absence of people with disabilities in public spaces: “People with disabilities are less visible in low- and middle-income countries. You don’t see them very often. In the United Kingdom, you see many people with disabilities on the streets [...] the law and infrastructure allow this. The environment enables their participation” (I10). Thus, when discussing cities, generalizations are inappropriate. Each territory presents its own limitations and opportunities for intervention.

Similarly, when addressing participatory design, even when referred to in the singular, it is necessary to emphasise its plurality. Each territory will shape participatory practices, weaving unique

design processes. This is evident in the professionals' narratives, which show how, across different territories, they develop distinct projects and intervene according to what is politically emergent.

These narratives illustrate how the lived experiences of women architects and designers are not only shaped by systemic challenges but also become powerful catalysts for change. By transforming personal experiences into inclusive design practices, these professionals reimagine both processes and outcomes. Their work demonstrates that participatory design, when informed by diverse lived experiences, can challenge dominant norms and contribute to more equitable futures.

4 DISCUSSION

The interviews revealed essential insights into participatory design as a practice that promotes social justice, diversity, and gender equity. This discussion seeks to deepen the understanding of participants' experiences and connect them to broader theoretical and political concerns in architecture and design.

Empathetic listening, openness to cultural diversity, flexibility, critical thinking, and transdisciplinary collaboration emerged as key competencies for participatory design. These competencies are not isolated technical abilities but are grounded in ethical commitments that challenge exclusionary practices and power hierarchies. The idea of horizontality in knowledge, where diverse voices and forms of expertise are valued equally, contrasts with traditional hierarchical structures that have historically marginalized women in these fields.

In this context, participatory design is not only a methodology but also a political and ethical stance. The rejection of standardization and universal solutions reflects a desire for authenticity in design practices. Projects that are situated in local realities, responsive to specific users, and developed through inclusive processes become acts of resistance to dominant market logics that prioritize cost-efficiency over human and environmental well-being. This reorientation calls for rethinking architectural and design education to embed inclusive values across the academic trajectory. Several interviewees pointed to significant gaps in design and architecture curricula, especially regarding the integration of critical discussions about gender and power. Without such content, students may not develop the critical competencies needed to challenge exclusionary design practices or imagine alternatives.

This discussion also brings to the forefront the experiences of women in architecture and design. Participants described careers marked by invalidation, lack of equitable opportunities, and moments of silencing, often in academic or hierarchical professional contexts. At the same time, they identified a unique capacity to foster inclusive and relational design processes through listening, empathy, and care. The contradictions they navigate, between professional recognition and caregiving roles, and high expectations and institutional neglect, illustrate the structural inequities still present in design.

These challenges are not incidental. They are produced and sustained by entrenched gender norms, including the persistent expectation of the ideal worker who is fully available, unburdened by relational responsibilities. This model remains deeply embedded

in architectural offices, academic institutions, and funding structures, even as the number of women entering the profession grows. The underrepresentation of female leadership, mentors, and institutional support perpetuates a cycle in which women's contributions are undervalued or rendered invisible.

Yet many of the participants transform these constraints into opportunities for critical action. Their design practices do not merely accommodate the challenges they face. Instead, they use them as starting points to question dominant assumptions, expand who design is for, and redefine what design can achieve. Their participatory projects emerge from this deeply embodied knowledge, shaped by lived experience and relational thinking. Whether developing safer public spaces for women, inclusive learning environments, accessible spaces, or collaborative processes that foreground diverse perspectives, these women show how design becomes a vehicle for justice.

In their accounts, several interviewees mentioned participatory practices that consisted of walking through urban spaces alongside other women who live in these territories. Such initiatives reiterate the commitment to respecting local cultural specificities and foster a subjective understanding of how urban spaces affect women. The act of walking through the territories also involved identifying places of exclusion that limit women's appropriation and social participation in urban spaces.

These narratives show that participatory design is not only a method but a field actively being reshaped by women who confront and transform the conditions of their exclusion. The structural challenges they face, from professional invalidation to the lack of institutional accommodation for caregiving, are symptoms of broader systems that have historically devalued women's knowledge and labor. According to Kern [17], "cities have the chance to realign spaces and services to a wider set of values, including care, equity, justice, collectivity, and sustainability". Despite this, the women in this study have become leaders of a different kind of design. One that centers care, equity, collectivity, justice, and plurality.

Importantly, these professionals are not simply engaging in participatory practices. They are generating new ways of knowing. Their contributions refuse neutrality and insist on ethical commitments. They are actively redefining what counts as valuable knowledge, whose voices matter, and what design is for. Participatory design, in this view, becomes a powerful space for political and cultural transformation.

In recognizing these contributions, the field must not only acknowledge women's presence but actively support the systemic shifts their practices demand. This means expanding curricular content, fostering inclusive work cultures, and addressing the structural barriers that continue to marginalize women and others underrepresented in design. They offer a model for reimagining design itself, one that builds more just, inclusive, and sustainable futures.

Although this study highlights the practices of women in pursuit of social transformation, it is important to reflect that other social actors can also play a leading role in interventions and in promoting equitable conditions for marginalized groups. The responsibility for addressing historically established inequities is shared, including actors who hold the power to enact significant change. Therefore, it is crucial to question how political leaders, industry leaders, and

academic institutions can contribute to dismantling barriers and advancing equity.

In this regard, as highlighted by the interviewees, the restructuring of academic curricula plays a key role in introducing an intersectional understanding of inequalities, shaping professionals who are more politically aware. Furthermore, in the industrial sector, fostering female leadership has the potential to break the cycle of professional invisibility. Political leaders must critically assess their territories, ensuring alignment with global agendas that promote equity, such as the UN Sustainable Development Goals introduced at the beginning of this study. Prioritizing safe public spaces with accessibility and encouraging the co-participation of community groups in the design of public infrastructure are actions well within the reach of governmental authorities.

By connecting the results to the literature, we can observe initiatives of practices that meet the needs highlighted in this paper. Regarding academic instrumentalization, a case study carried out in Spain shows the relevance of higher education in architecture being integrated with gender perspectives. Parra-Martínez, Gutiérrez-Mozo, and Gilsanz-Díaz [18] describe the reality of the University of Alicante, which maintains actions to promote equity, diversity, and inclusion. Among these, there is the diagnosis of physical spaces to identify accessibility barriers, as well as the presence of landmarks of women's contributions on campus, bringing visibility to their practices. Reflective spaces, such as workshops on female representation in public spaces and questioning of normativity, as well as the prioritization of collective spaces, are also present.

Regarding gender inequality, there are investigations in different countries, highlighting the global characteristic of this violence. Caven, Astor, and Urbanavičienė [15] analyze inequalities in Lithuania, while Arroyo and Madariaga [13] investigate the trajectories of Spanish professionals, observing the barriers they face. The visibility of women's professional practices also appears in studies such as that by authors Rüttschilling and Artuso [19], which portrays four Brazilian communities led by women who work on developing sustainable alternatives in the fashion industry. In the field of architecture, James-Chakraborty [20] highlights three women who contributed significantly with non-traditional practices to modern architecture, and Abril and Madariaga [21] collaborate in the historicization of the presence of women in the profession.

These findings highlight an ongoing movement to value women in the field of architecture and design, as well as to value their participatory and innovative practices. However, the visibility of their contributions and trajectories, both in the academic and professional contexts, still requires continuity and expansion. Productions such as those mentioned here - and this research - play a very important role in providing space for their narratives and recognizing the relevance of their actions. The continuity of this recognition contributes to the empowerment of professionals who promote social, historical, and political transformations through their participatory practices.

The practices of the interviewees engage with debates that are already well established at the intersection of architecture and participatory design, particularly with regard to relational aspects and the constitutive perspective of becoming [22]. In this sense, their practices emerge as democratic expressions, reconfiguring roles, forms of knowledge, and authority within the architectural field—central

axes of discussion within participatory design scholarship. What emerges as distinctive in this article is how these participatory practices operate as strategies for confronting traditional architectural conventions by displacing notions of authorship, expertise, and technical neutrality. Drawing on embodied and intersectional experiences, shaped by gender, culture, caregiving roles, disability, and territorial conditions, the interviewees mobilize transformations of architectural practices that have historically been constituted through hierarchies, exclusions, and normative universalisms.

Finally, it is important to emphasise that the competencies highlighted in this article, emerging from participatory practices, represent innovative contributions to architecture. These competencies constitute principles of Participatory Design, yet they remain underexplored within the architectural field. Through them, the focus shifts to the co-creation process rather than solely on the final product. In this way, the traditional architectural model is challenged, promoting politically engaged practices that interact with the territory and with other existing subjectivities, such as issues of class, gender, and race.

5 CONCLUSIONS

This paper aimed to highlight how women in architecture and design fields navigate their experiences while advancing design practices grounded in inclusion, accessibility, and social responsibility. Through in-depth interviews and thematic analysis, it was possible to identify key competencies for the practice of participatory design, as well as gender implications for architecture and design professionals. The narratives shared by the interviewees offered insights into the ways women architects and designers foster these competencies while navigating the gendered dynamics of their professional lives. Therefore, it is necessary to pay attention to the constant - and sometimes veiled - female invalidations in the areas of architecture and design.

Despite the valuable insights gathered, this study has certain limitations that should be acknowledged. The research was based on a limited number of interviews, which, while rich in depth, may not fully capture the diversity of experiences among women architects and designers across different regions or professional contexts. Additionally, the study also focused primarily on gender, without exploring how other intersecting identities, such as race, class, or disability, shape professional experiences and design approaches. These limitations highlight the importance of further research to broaden the scope of inquiry and include a wider range of voices and perspectives in the discourse on ethical and inclusive design.

For future research, it is recommended to explore how the competencies identified in this study are being integrated into the training of architecture and design professionals. Exploring the perspectives of students currently in academic programs can provide insight into the extent to which educational environments are fostering ethical, inclusive, and participatory design practices. Further studies could also examine how intersecting identities influence the professional experiences of women in design and architecture. Additionally, identifying persistent patriarchal structures within academic and professional contexts may support efforts to dismantle barriers that hinder inclusive practices. These lines of inquiry would complement the current study's findings and address its limitations,

contributing to a more comprehensive and equitable vision for the future of participatory design.

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Rebuilding Place, Reframing Identity: Participatory Visual and Environmental Tools for Intercultural and Marginalised Communities

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Abstract

Over the past decade, the increasing number of asylum seekers and refugees has presented significant challenges to European societies. In Hungary—a key transit country—integration is further hindered by xenophobic attitudes and systemic barriers. Refugee youth, particularly unaccompanied minors, experience heightened vulnerability because of their legal and social status within the child protection system, linguistic barriers, cultural dislocation, and the psychological toll of forced migration. This paper examines how participatory design, visual communication, and placemaking can support the integration and well-being of young refugees. It focuses on a two-volume toolkit developed through ten years of practice-based research by the authors, founders of the Hungarian NGO Open Doors Hungary. Open Doors is home to a diverse and proactive community of Hungarians, foreigners, refugees, volunteers, activists, and others engaged in building an inclusive society. Since 2013, the organization has created physical and metaphorical spaces for intercultural dialogue that foster mutual learning through cooperative design processes—including planning, designing, and realization—implemented through workshops, training sessions, and public events. The study is situated at the intersection of visual communication and architecture. It combines a literature review, stakeholder interviews, and fieldwork conducted across several projects led by the authors at Open Doors Hungary and the Moholy-Nagy University of Art and Design Budapest (MOME). It explores how creative, design-led methods foster social inclusion, intercultural dialogue, and emotional resilience among marginalized youth. The toolkit introduced in this research consists of two interconnected approaches: (1) the physical environment as a medium for creating new place attachments, and (2) visual communication as a means of facilitating intercultural understanding and social connection. Both volumes were developed iteratively through participatory processes involving refugee youth and professionals working across education, psychology, and social care. The toolkit was tested by professionals such as social workers, educators, psychologists, and community artists. Their feedback confirmed its practical relevance, clarity, and adaptability across diverse contexts. Respondents highlighted the value of the toolkit as a therapeutic

and pedagogical aid, particularly useful for those unfamiliar with design methodologies. They also noted its potential for integration into long-term development programs within schools, youth centers, and temporary homes. The emphasis on visual literacy, participatory methods, and flexible activities was especially praised for helping professionals and youth navigate complex emotional and cultural experiences. The two-volume toolkit offers a culturally sensitive, interdisciplinary methodology for professionals working with refugee and migrant youth. It demonstrates how participatory design, visual communication, and placemaking act as bridges between diverse social realities, enabling more inclusive and empathetic practices in education, care, and community-building. While its success depends on facilitation and proper contextual adaptation, the toolkit has strong potential to enrich social integration frameworks and support young people navigating the complex realities of displacement

CCS Concepts

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

Keywords

forced migration, interdisciplinary approaches, visual communication, place attachment, design toolkit

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1 Introduction

The global rise in asylum seekers and refugees over the past decade has emerged as one of the most pressing challenges for contemporary societies. Because of its geographic position, Hungary has served as a primary transit country to the European Union. Xenophobia and negative stereotypes about foreigners among segments of Hungarian society exacerbate barriers to integration, creating conflicts between host communities and newcomers [1, 2]. “For this reason, migration is understood as an unforeseen, so-called accidental crisis that demands substantial effort from the individual” (authors’ translation). Such crises disrupt interpersonal relationships and foster learned helplessness, isolation, and depression amid communication barriers and cultural differences.



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The authors, trained in graphic design and architecture, founded a community-based non-governmental organization in Hungary that has promoted intercultural dialogue through visual communication, placemaking, and design since 2013. The NGO involves unaccompanied refugee minors and young migrants in creative activities. Refugee minors arriving in Hungary constitute a distinct group, as their situation is shaped not only by their refugee status but also by their placement in the child protection system. Long, perilous journeys and asylum uncertainties exacerbate any post-traumatic stress disorder (PTSD) stemming from the trauma of losing familial roots and connections. Cultural gaps and linguistic barriers render social integration in the host country especially challenging. Inclusion requires frequent contact with the local society, and this, in turn, means developing new capacities: cultural knowledge, language skills, and intercultural competencies that help individuals overcome these barriers.

The study—arising from the intersection of the two authors' PhD-in-practice research projects—connects theory and practice and adopts a mixed-methods approach. This approach comprises (1) a review of the literature to explore the potential of visual communication and the built environment in the context of participatory and intercultural design practices, as well as a review of existing relevant toolkits; (2) interviews to understand the main challenges faced by specific target groups; and (3) fieldwork to test and monitor a participatory methodology examining how visual communication, architecture, and design can support young refugees in addressing the challenges of forced migration.

The paper explores existing tools that support intercultural connections, visual methods, and placemaking practices; then introduces the structure and methodology of the authors' two-volume toolkit, along with the literature informing the methods it incorporates; and also presents the application of the toolkit, developed over the past ten years through the authors' research and field experience. The toolkit focuses on two distinct yet interconnected approaches involving young refugees: (1) the physical environment, which supports the cultivation of new place attachments, and (2) visual communication, which supports intercultural social connections.

2 METHODOLOGY

2.1 Participant profile

In their respective doctoral research projects, both authors focused on young people who had experienced forced migration. These young people contributed as interviewees in in-depth interviews and as primary participants in participatory design programs and workshops. The in-depth interviews followed clearly defined selection criteria, whereas the workshops were open to a broader range of participants.

To establish a homogeneous group of interviewees, the authors selected 25 individuals based on five criteria. These were as follows: (1) all had been forced to leave their home countries; (2) all were between 18 and 40 years old; (3) all were born outside Europe, in the Middle East or Africa; (4) all had lived in Europe for at least two years, including at least one year in Budapest; and (5) all had obtained some form of residence permit or recognized refugee status, or both.

The scope of the target group was later expanded. In addition to the ongoing fieldwork, further participatory design projects were conducted with other disadvantaged groups experiencing loss of place and navigating cultural differences. These included young Hungarians living in deep poverty, Hungarian children in state care, and adults experiencing homelessness in Budapest.

Another major target group of the joint research consisted of professionals working with disadvantaged groups, including social workers, psychologists, child protection professionals, program managers, and special education teachers whom the authors reached through interviews and discussions over the years.

2.2 Interviews

Throughout both research projects, interviews were conducted with different groups on a range of themes, including in-depth interviews with 25 people who had experienced forced migration and 10 professionals working with them. In addition, shorter, focused interviews were conducted during the implementation of each project with both participants and with representatives of the partner organizations (Károlyi István Children's Center, Fót; Tűzcsiholó Association, Tiszadob; BMSZKI Alföldi Temporary Shelter, Budapest; Borostyánkő Children's Home, Kőszeg).

The authors aimed to explore the coping strategies of interviewees who had experienced forced migration, the challenges they encountered in their new physical, cultural, and social environments, and how they built—or attempted to build—new physical and psychological homes, communities, and points of attachment in Hungary. The core interview question explored what strategies enable people who have experienced forced migration to begin forming new attachments in Hungary. The interview protocol covered four main themes: (1) their migration journey to Hungary; (2) their first impressions and challenges; (3) their community life; and (4) their connection to their new physical environments. During the interviews, an interactive model [4] was employed to minimize misunderstandings related to linguistic barriers and to reduce the stress associated with one-sided questioning. Visual exercises and activities (e.g., pictures, maps, and drawings) further supported communication across linguistic differences. This interactive and visual approach enabled a natural, in-depth dialogue.

More formal in-depth interviews were conducted with professionals working with the target group, including social workers, psychologists, child protection professionals, institution managers, and special education teachers. In these interviews, the questions likewise focused on the coping strategies and attachment potential of the target population, as well as on understanding the institutional context of the care system.

In addition to the in-depth interviews, shorter, focused interviews were conducted, professional consultations were held, and questionnaires were administered during the implementation of each project with both participants and representatives of partner institutions and organizations, including social professionals. These shorter interviews and questionnaires had a different focus from the in-depth interviews: they addressed the process and outcomes of each project.

2.3 Fieldwork

A significant part of the fieldwork consisted of participatory design projects and workshops planned, prepared, and facilitated by the authors. In addition to working with different target groups, the authors participated in several international study visits between 2013 and 2024. These included visits to Switzerland to learn about the work of a municipal community workshop; to Belgium to study the operation of a Red Cross refugee center; to Greece, Cyprus, Italy, and Finland to visit reception centers and NGOs working with asylum seekers and refugees; and to Palestine to learn about the daily work of NGOs, peace organizations, and a refugee camp in Bethlehem.

Ongoing fieldwork since 2013 has included short (half-day) creative workshops, longer design projects (lasting one week to six months), creative camps, and international youth exchanges. These creative and participatory activities remain ongoing, with the active involvement of the target groups previously described. They have focused primarily on young refugees and asylum seekers (KIGYK Home for Unaccompanied Minors, Fót; Refugee Camp, Debrecen; Vámoszabadi Reception Center). As the research has progressed, the work has expanded to include disadvantaged Hungarian youth (Budapest, Ágasegyháza, Tiszadob), Hungarian youth in state care (Borostyánkő Children's Home, Kőszeg), and adults experiencing homelessness in Budapest (Alföldi Temporary Shelter). In these workshops and projects, members of the target groups have become active participants in the design process. They identify shared needs or problems, formulate related design challenges, and—working individually or in groups—develop solutions in response to those challenges. Finally, they implement some or all of these solutions. The short programs (lasting a few hours) have included workshops on textile screen printing, bookbinding, furniture making and refurbishing, experimental photography techniques, zine production, foam stamp making, and wall painting. Longer projects (lasting several months) have included the design and renovation of indoor and outdoor community spaces, media training (photography and video), game design workshops, and placemaking camps. Whether short workshops or longer projects, the aim has consistently been to involve young people in the design and implementation process through participatory design methodology, enabling them to make their own decisions, acquire new competencies, and develop creative problem-solving skills.

2.4 Interdisciplinary approach

From the outset in 2013, as part of their doctoral research projects, both authors involved various stakeholders in a co-design process, adopting an interdisciplinary approach. Designers and artists from different fields—visual communication, media, architecture, and design—worked together with local community leaders, social workers, psychologists, and local and international volunteers from various professional backgrounds, as well as with local and international youth. In many cases, these projects connected urban and rural communities, creating opportunities for dialogue about local issues and for identifying shared global values. Through these connections, an intercultural and interdisciplinary network emerged, fostering a thorough understanding of the challenges faced by the target groups.

The two main disciplines of the toolkits introduced below are (1) architecture and environmental studies, which aim to cultivate place attachment, and (2) graphic design and visual communication, which aim to foster intercultural competencies and social connections.

In response to emerging challenges and constraints, the methodology was adapted as needed to reflect prevailing conditions. In Hungary, restrictive political dynamics and polarized public discourse limit civic engagement—particularly in the field of migration—thereby creating structural and cultural barriers to refugee integration that, in turn, have influenced both participation and institutional collaboration. Another notable challenge was the fragmentation of the refugee community, driven by high mobility, legal uncertainty, and the lack of stable networks. Both challenges further complicated long-term engagement and continuity within participatory design processes; on several occasions, it required pausing to devise new strategies to ensure that participants could engage in a safe and supportive environment. Additionally, the COVID-19 pandemic introduced unforeseen obstacles, including the suspension of in-person activities, reduced access to Open Doors Hungary's intercultural community space founded and operated by the authors, and heightened psychological distress among youth participants. These conditions have required ongoing adaptation, including flexible facilitation methods, the use of hybrid and low-threshold tools, and strengthened partnerships with educators and social workers to sustain meaningful participation despite external constraints.

3 ESTABLISHED TOOLKITS

In response to the growing need for inclusive and creative educational practices, a range of methodological toolkits has emerged. These toolkits support the integration of young refugees and other vulnerable groups by drawing on methods from social work, design, visual communication, and participatory approaches. This chapter reviews and categorizes the established toolkits considered during the preparatory phase of the project and presents them as inspiring examples of how diverse methodologies can be combined (1 and 2).

Several of these toolkits focus on developing problem-solving, creativity, and collaboration skills through visual and participatory learning. For example, *IDEO's Human-Centered Design Toolkit* (1) [5] is a widely used, globally adaptable methodology for empathetic, community-focused problem solving, while *Frog Design's Collective Action Toolkit* (CAT) (2) [6] is a modular, open-source guide for community-driven innovation. Although these toolkits are not refugee-specific, their user-centered, community-based, and visual approaches can be effectively adapted for integration projects that aim to address refugee needs.

Two Hungarian examples illustrate the integration of design pedagogy and creative learning within public education. *Designped* (3) [7] is a curriculum that enhances visual literacy and creativity through experiential, problem-based learning, promoting interdisciplinary collaboration and fostering 21st-century skills essential for young refugees navigating new educational systems. Developed at MOME, *Design Thinking in Public Education* (4) [8] applies the educational framework “Holistic, Collaboration-Based Design”



Figure 1: An overview of the toolkits considered.

(“Holisztikus, Együttműködés-alapú Design”; HEAD) to engage students in collaborative, real-world problem solving.

Another key dimension of refugee integration involves overcoming linguistic and cultural barriers. Some toolkits enhance nonverbal communication and foster intercultural competencies through experiential and reflective learning. *ICOON for Refugees* (5) [9] and *Go Visual!* (6) [10] are nonverbal communication tools featuring pictograms on essential topics such as food, health, and transportation. Both aim to bridge linguistic barriers between newly arrived refugees and those assisting them.

Another toolkit, *Intercultural Collaboration by Design* (7) [11] provides a theoretically grounded framework and more than 30 visual-thinking activities that enable multicultural and virtual teams

to navigate cultural and disciplinary boundaries, thereby enhancing creativity, cohesion, and shared problem solving.

Creating a sense of belonging often begins with the physical and social environment. Placemaking toolkits engage communities in shaping shared spaces and promoting inclusivity through participatory design processes. *The Placemaking Europe Toolbox* (8) [12] offers an extensive collection of open-source resources to support the co-design of public spaces. Its manuals, guides, and handbooks on community engagement and temporary installations enable creative adaptation across diverse local contexts. Licensed under Creative Commons, the toolkit fosters collaboration among designers, citizens, and policymakers. Similarly, *UN-Habitat’s Placemaking Toolkit* (9) [13] promotes inclusive and resilient public space



Figure 2: An overview of the toolkits considered.

development through co-creation and the meaningful participation of diverse groups, including migrants and refugees.

Effective integration also requires institutional support and strategic planning. The following toolkits provide policy guidance and implementation strategies for local authorities and service providers. Developed by the Council of Europe, *The Intercultural City Step By Step: A Practical Guide for Applying the Urban Model of Intercultural Inclusion* (10) [14] outlines a comprehensive model for intercultural urban policies that promote equality, interaction, and inclusive governance. *The Scottish Refugee Council's Tools to Support Individual Refugees* (11) [15] offers practical guidance for community-based integration, including resources for building social connections, learning the local language, and accessing services. *UNHCR's Municipalities Toolkit* (12) [16] provides local governments with strategies and case studies to foster refugee inclusion at the municipal level, covering coordination mechanisms, service access, and community engagement.

The toolkits reviewed above offer valuable inspiration for integrating refugee youth and fostering intercultural cooperation. However, several do not focus specifically on refugee or migrant youth and therefore may not fully address the needs of these vulnerable groups. Others that address refugees' specific needs either focus on early-stage integration and emergency communication (e.g., *ICOON*; *Go Visual!*) or operate at the institutional and policy levels (e.g., *UNHCR*; *The Intercultural City Step By Step*). Few combine design-based methodologies with a specific focus on refugee youth in educational or community-building contexts. They also do not explore the possibilities of long-term, participatory, and

creative empowerment through design-led educational processes that integrate visual communication, placemaking, and co-creation.

The methodological toolkits proposed by the authors—*Volume 1: Rebuilding: A Toolkit for the Proactive Cultivation of Place Attachment* (2024) and *Volume 2: Open Doors: A Methodological Collection of Participatory Visual Tools for Intercultural Communication* (2025)—therefore fill an important gap: they are design-based and refugee-specific, as well as long-term, participatory, and developmental, rather than merely communicative or administrative. They aim to bridge the gap between emergency-response tools and policy frameworks by focusing on belonging, agency, and collaboration through design education.

4 A PARTICIPATORY-BASED, TWO-VOLUME DESIGN TOOLKIT

The main outcome of the authors' practice-based doctoral research is a two-volume design toolkit. While the two volumes share a common participatory design approach, they operate within different design areas and focus on different design disciplines. The first volume, *Rebuilding: A Toolkit for the Proactive Cultivation of Place Attachment*, concentrates mainly on architecture, placemaking, and object design. The second volume, *Open Doors: A Methodological Collection of Participatory Visual Tools for Intercultural Communication*, addresses graphic and media design. This shared approach is grounded in twelve years of experience working with refugee youth and their Hungarian peers. The toolkit's target group consists of social care professionals, activists, as well

as socially engaged artists and designers who are open to initiating interdisciplinary collaboration through participatory design.

Through the toolkit, the authors aimed (1) to raise awareness of the opportunities of participatory design in the context of forced migration and interculturality; (2) to foster further professional discourse and interdisciplinary development; (3) to systematize and evaluate the theoretical and practical outcomes of their participatory design research projects; (4) to provide a transferable overview of the tools and frameworks used throughout the past twelve years of their practice; and (5) to prepare the methodology for extension to other target groups. In addition to these shared aims, the two volumes also have their own specific goals.

Both volumes follow a similar overall structure. They begin by situating the work within a broader context and outlining their specific focuses. Each volume then presents its aims, target groups, and ethical principles, before briefly laying out the theoretical background of the relevant design fields and related disciplines. In the second half of each volume, practical, step-by-step workshop descriptions are provided, covering a wide range of possible applications. Each volume also includes its own appendix: the first contains questionnaires, interview guides, and a collection of rubber stamps featuring symbols for cognitive mapping exercises, while the second includes a set of stencils designed to support visual and creative activities.

The aim was to create a visually engaging and inspiring handbook that encourages readers to use it in practice. To achieve this, the handbook was printed using risography, which provides a distinctive aesthetic and is a highly sustainable printing solution for small print runs. The appendices were integrated into the main body of the manual but printed on different paper types, creating visual and tactile variation and structuring the information more clearly. The two volumes were printed in distinct color combinations, creating a dynamic and visually striking effect. Both doctoral defenses have already taken place, and both volumes are available online through the MOME library.

4.1 Volume 1: Rebuilding: A Toolkit for the Proactive Cultivation of Place Attachment

The first volume offers a coping strategy for trauma resulting from the loss of place by supporting the cultivation of place attachment. Although the effects of trauma cannot be permanently healed [17], the authors view creative modifications to the physical environment (and its objects) as a meaningful and effective way to support the overall well-being of people experiencing the loss of place. The toolkit is grounded in architecture and environmental psychology.

Losing one's home is a traumatic event [18, 19]. It tears people from a familiar, intimate, and protective environment, disrupting their territorial behavior and eroding their sense of control. As a result of material losses, the individual may no longer feel that objects or places belong to them, leading to a diminished sense of identity. People who have lost their homes are affected not only by physical homelessness but also by psychological homelessness, which refers to a state in which individuals experience their home as insufficient in some way and are unable to develop a sense of place attachment (Niit, 1993, as cited by Düll [20], p. 237). This crisis hinders the processing of grief, leaving the individual emotionally

fixed in the past—unable to form new meaningful attachments to places or establish new interpersonal relationships—and may ultimately give way to prolonged mourning [20].

After losing their home, victims are confronted with a twofold task. “They must cope simultaneously with the grief associated with the loss of their former place and with the task of creating a new one” ([20], p. 238; authors’ translation). People develop and care for places to which they are connected through family, community, ethnic, or cultural ties, as these ties reinforce a sense of belonging. New social relationships formed around the place, along with activities carried out within and around it, play a decisive role in how people come to feel attached to it. This can be understood as both a coping process and a form of cultural learning [20], and it can be effectively supported through participatory design methods.

The design process typically involves alternating between divergent and convergent phases. Its strength lies in enabling designers to engage with large amounts of information and a wide range of ideas generated during brainstorming without becoming overwhelmed. After allowing for this breadth of ideas, the material is gradually structured to deepen understanding of the problem and refine potential solutions in line with real-world constraints. However, the process is by no means linear. Through a critical approach and systematic prototyping and testing, designers can return to earlier stages, incorporate new insights and experiences, and refine the project. It therefore allows for experimentation and the possibility of making mistakes. A key advantage of the design process is that it does not rely on established problem-solving patterns but instead responds to the specific context as it is cognitively constructed in the moment. It is therefore particularly well suited to situations in which the designer is confronted with previously unknown terrain [21].

The design process can enhance an individual's sense of purpose, responsibility, autonomy, achievement orientation, and cognitive abilities, indirectly contributing to building resilience. Experiencing tangible outcomes can strengthen self-esteem, while teamwork builds communication skills. Some studies indicate that the skills acquired through the design process are retained over the long term [22]. Methodologically, the toolkit adopts a participatory design approach, in which victims experiencing the loss of place are actively involved in the design process in order to benefit as fully as possible from its potential.

The first volume aims to support the cultivation of multiple dimensions of place attachment [19], including (1) a sense of control, (2) the experience of creativity, (3) gaining experiences and making memories, (4) a sense of ownership, (5) learning to adapt, (6) learning about the local area, (7) a sense of community, (8) interaction with the environment, (9) personalizing one's environment, and (10) a sense of safety.

After outlining the theoretical background of loss of place, place attachment, and participatory design, the book proceeds to describe the concrete stages of the collaboration. The creative exercises introduced and illustrated in the volume support all stages of the collaboration with participants: first trust-building (such as creative and team-building exercises or semi-structured group conversations), followed by mapping the participating group's connection to their environment (such as cognitive mapping, persona development, and user journey illustration). Based on the trust established



Figure 3: Illustration of the proposed collaboration process: (1) trust-building, (2) mapping, (3) a series of workshops, (4) evaluation, (5) reframing, (6) closing. (Photo by the authors.)

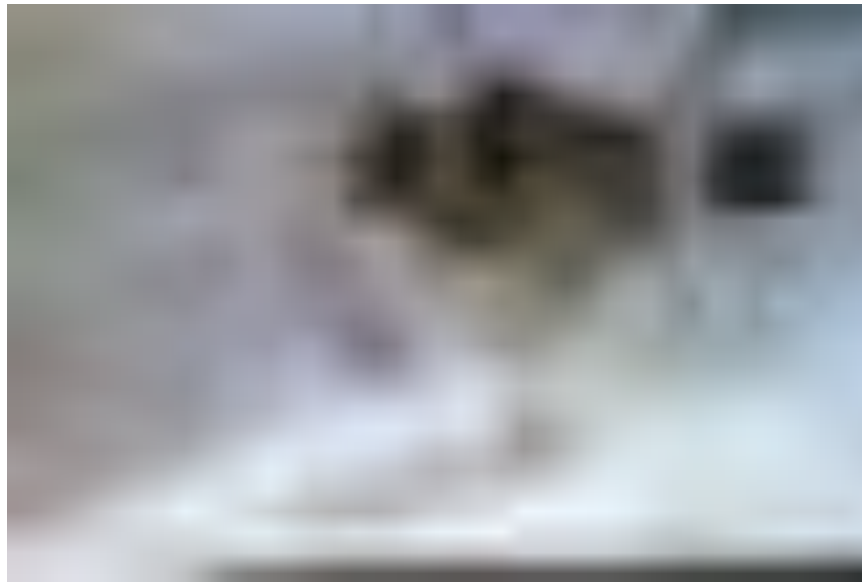


Figure 4: A set of rubber stamps featuring symbols for cognitive mapping exercises from Volume 1: Rebuilding: A Toolkit for the Proactive Cultivation of Place Attachment (2024). (Photo by Máté Lakos.)

and the insights gained from the mapping phase, a series of participatory design workshops can be conducted in collaboration with psychologists and social care workers. The workshops can address different aims and operate at different scales, depending on the needs and capacities of the group.

The toolkit offers workshops focused on redesigning and implementing interventions at three levels: (1) entire spaces, such as an exploration trail, a land art installation, an indoor community space, or a bedroom; (2) specific elements within a space, such as a door or entrance, a community map, or a shared message wall; and

(3) individual objects, such as a chair, bedside lamp, bag, diary, or picture frame.

4.2 Fieldwork

The second volume of the toolkit, *Open Doors*, reflects on the communicative challenges migrants and refugees face as they navigate life in a new country and highlights the bridging potential of visual communication. The toolkit brings together practices designed to support cultural exchange and active collaboration through creative and interactive approaches. Enhancing collective experience and

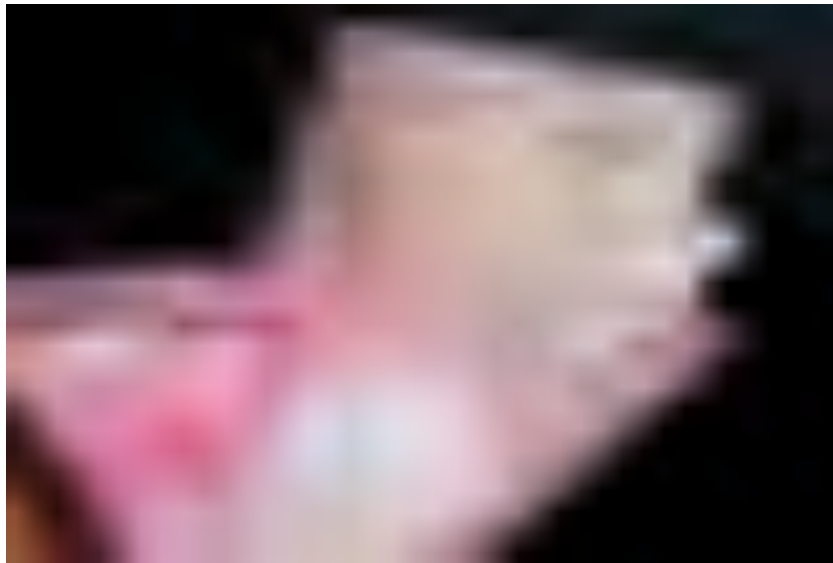


Figure 5: Volume 2: Open Doors: A Methodological Collection of Participatory Visual Tools for Intercultural Communication—Exercises. (Photo by the authors.)

cooperation benefits not only young people from diverse cultural backgrounds but also strengthens overall community cohesion. By engaging in creative processes and design thinking, participants can explore cultural diversity in new ways while developing problem-solving and collaborative skills.

The methods draw on both the universal and culture-specific characteristics of visual images, as well as the action-based, collaborative nature of design, thereby creating a platform for intercultural dialogue. They can serve as a shared, nonverbal means of communication in situations where participants do not share a common spoken language. Visual and tactile materials foster creative thinking, support information sharing, enable dialogue, and provide opportunities for self-expression. At the same time, the language of images varies across cultural contexts, offering participants a means of communicating the unique values and characteristics of their own cultures. As a process, design creates a platform for dialogue and is well suited to identifying and addressing shared problems, while collaborative design and creation promote intercultural exchange by encouraging discussion of different perspectives and supporting effective co-creation.

The exercises introduced in the second volume aim to support a range of objectives within participatory settings, including (1) team building, (2) getting to know one another, (3) icebreaking, (4) self-expression, (5) self-representation, (6) cultural exchange, (7) shared decision-making, (8) community building, (9) storytelling, (10) problem-solving, and (11) dialogue.

This volume is a methodological handbook containing step-by-step exercises and recommendations for developing long-term projects. It includes a set of physical and digital stencils featuring abstract forms and pictograms, along with a modular font set designed specifically for the exercises presented in the volume.

The structure of this volume reflects the timeline of the projects implemented within the Open Doors program. The Introduction

outlines the context in which the methodology was developed, presents the aims and structure of the manual, and offers general recommendations drawn from practical experience. The main chapters follow the progression of the workshops and projects, guiding readers through the process of working with an intercultural group—from initial activities designed to build connections, through creative exercises and collaborative project work, to concluding methods of evaluation and reflection.

The chapter titled “Structure” details how the exercises can be adapted to different timeframes, including short three-hour sessions, medium-term projects spanning three to four days, and longer engagements of one to two weeks. Finally, the Annexes include printable versions of the tools referenced throughout the manual, as well as a digital stencil set and a modular font set created specifically for use with the exercises featured in this collection.

4.2.1 Stencil and font toolkit for visual communication. Drawing on over a decade of experience in participatory visual communication, the stencil and font toolkit was developed in response to a recurring challenge: many participants felt inhibited by their perceived lack of drawing skills, which limited both their engagement and creative thinking. This was particularly evident in collaborative visual tasks such as foam stamp making or mural design, where idea development often relied on visual representation. The toolkit was therefore conceived as a flexible, modular set of visual elements—pictograms, abstract shapes, and letters—designed to build participants’ confidence and support their abstract and symbolic thinking. The pictogram set was derived from an analysis of visual outputs produced over the years, including participant drawings, videos, murals, and animations. Recurring motifs were distilled into a core library of symbols reflecting participants’ lived experiences, interests, and narrative strategies. These symbols were subsequently deconstructed into geometric elements that could be



Figure 6: Stencil set from Volume 2: Open Doors: A Methodological Collection of Participatory Visual Tools for Intercultural Communication. (Photo by the authors.)

freely recombined, transforming the set into a dynamic visual language tool rather than a fixed system.

Complementing the pictorial elements, a modular font set was developed to support verbal–visual expression, particularly for participants with emerging language skills in Hungarian or English. Each letter was constructed from six modules using eleven basic shapes and designed to fit within the same grid system as the stencil set. This ensured visual coherence while allowing for customization and experimentation in exercises such as Tile Mosaic and Muralia Design. Considerable attention was paid to the design and production of the toolkit: the stencils were made from transparent, brightly colored acrylic sheets, laser-cut for precision, durability, and ease of use. Their ergonomic design, visual appeal, and reusability make them accessible tools for workshops of varying lengths and formats. Produced in collaboration with MOME’s laser-cutting workshop, the toolkit demonstrates how thoughtful design can support inclusive, intercultural creative practices and foster shared visual expression across linguistic and cultural divides.

5 Applications to New Target Groups

5.1 Children living in state care

During the winter of 2023, a short collaboration was carried out with the Borostyán Childcare Center in Kőszeg, Hungary, based on the first volume of the toolkit. The project involved twelve children living at the center and aimed to strengthen their sense of place attachment, ownership, and security within their temporary home. The collaboration comprised an introductory problem-mapping meeting, a series of participatory design workshops, and a closing evaluation meeting—all facilitated by the authors in collaboration with a special education teacher from the center. Because the participatory design workshops were intentionally developed only after the initial problem-mapping meeting, this structure provided an opportunity to test the toolkit’s process: the workshops were

prepared in direct response to the needs and insights that emerged during mapping.

5.1.1 Problem-mapping tools. During the introductory problem-mapping meeting, multiple research methods were employed, including observation, group discussions with the children, cognitive mapping, questionnaires, and expert interviews. The session began with a facilitated group discussion in which the facilitators introduced themselves and the focus of the research; guided prompts encouraged an open exchange among the children. This discussion was complemented by the creation of a collective cognitive map drawn by the participants. In addition to visualizing the physical environment, the children were invited to place emotions, key functions, and short narratives onto the map. At the end of the meeting, the children completed a brief questionnaire about their use of the temporary home environment and their associated emotions and needs, addressing both their own rooms and the shared indoor and outdoor spaces.

The introductory problem-mapping meeting revealed significant gaps and needs in relation to the current physical environment: the building lacks the capacity to accommodate the number of children placed there, is insufficiently equipped, and is overly uniform rather than personalized. The space contains none of the objects typically associated with a living room—such as books, flowers, or pictures on the walls. In accordance with internal regulations, the bedrooms are highly standardized, each furnished with two beds, bedside cabinets, a wardrobe, and a shared desk. The bedroom doors are unmarked and display no indication of who lives inside. Personal belongings are scarce, and there are no lockable cupboards. The rooms remain freely accessible, offering no place to sit other than uncovered beds. As a result, the bedrooms provide little privacy; even an unfamiliar visitor may enter directly from the street without removing their shoes.

The problem-mapping tools revealed that the participating children could recall few positive memories associated with their current temporary home. They use the building functionally but are not emotionally attached to it. They need both greater privacy and a stronger sense of community. Another important finding was that, although the children were able to articulate needs related to their physical environment, these were largely framed in digital terms. While they did voice complaints about their surroundings, they did not take proactive steps toward changing them. In addition to the absence of strong community ties, it became clear after the first meeting that the children did not experience a sense of safety or control within their temporary home. Adapting to this situation appeared challenging for them, and they did not personalize their environment.

5.1.2 Tools for personalization and collaboration. Based on the insights gained during the introductory problem-mapping meeting, a series of participatory design workshops was developed. Four workshops addressed different aspects of the target group's material culture and physical environment: (1) personalizing bedroom doors, (2) individual ideation about one's room, (3) personalizing bedside lamps, and (4) creating chalkboard-painted surfaces in various areas of the environment. Each workshop began with an open discussion of the week's focus, followed by individual or small-group ideation and the creation phase itself. The sessions concluded with a collective reflection on the outcomes and a brief forward-looking ideation about future possibilities. In each workshop, the children could decide whether to work independently or together with their roommates. Because the problem-mapping meeting had shown that the children did not respect one another's privacy and that the rooms lacked personalization, the first workshop focused on the doors of the children's rooms. During this session, the children designed and created personal magnetic decorations for their doors. These elements both represented their identities and provided space for personal statements or room-specific rules defined by the occupants. The second session took the form of a broader ideation workshop in which the children designed their "dream bedroom" using photo collage. The outcomes of this exercise informed the direction of the next two workshops. In the third session, the children personalized their bedside lamps. In the fourth and final workshop, they designed and created differently shaped chalkboard-painted surfaces around their beds as well as in the shared common room at the entrance to their group space.

5.2 Homeless people living in temporary shelters

During the spring of 2025, another short collaboration was carried out, once again based on the first volume of the toolkit developed as part of the research project, in partnership with the Alföldi Temporary Shelter and the Institute of People–Environment Transaction at Eötvös Loránd University (ELTE) in Budapest, Hungary. It involved ten clients experiencing homelessness—organized into two groups of five—living in two residential rooms at the shelter. Titled *Design for Mental Health* and led by one of the authors, the research project was launched within the Society and Action Lab of the Moholy-Nagy University of Art and Design Budapest (MOME). The collaboration aimed to identify points of connection between

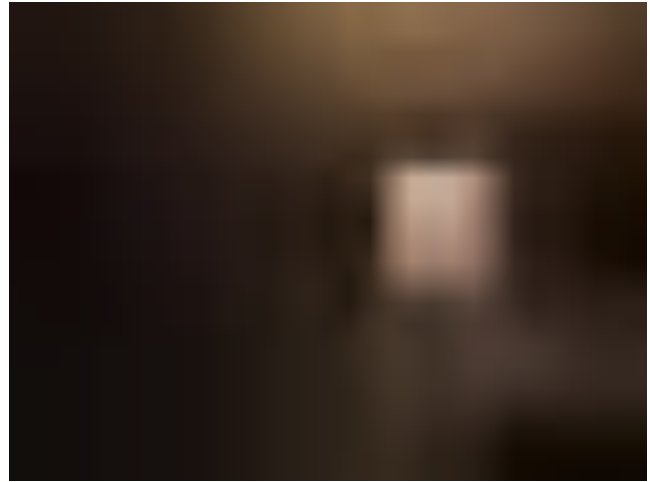


Figure 7: Bedside lamp—outcome of a participatory workshop, Kőszeg, 2023.

the challenges of loss of place—in this case, homelessness—and the opportunities offered by participatory design processes. The project developed a new research area and methodology through interdisciplinary collaboration, combining three thematic areas: (1) supportive physical environments, (2) participatory design methods, and (3) mental health challenges associated with homelessness. In a small-scale participatory design process involving clients of the Alföldi Temporary Shelter, the authors examined how participatory design could be integrated into the shelter's system of rules, with the aim of embedding creative activities into its range of services in the long term to support clients' agency.

5.2.1 Interdisciplinary approach in practice. The collaboration involved a preparatory phase and interviews conducted with the target group, followed by participatory workshops and creative sessions, and concluded with interviews conducted with the participating social workers and clients experiencing homelessness. The research was conducted through close interdisciplinary collaboration among a Hungarian design university, the Institute of People–Environment Transaction at the Faculty of Education and Psychology at ELTE, and the Budapest Methodological Center of Social Policy and Its Institutions (BMSZKI). In this framework, design methods were complemented by the expertise of psychologists and social care professionals.

During the preparatory stage, foundational discussions were held with partners representing various disciplines to develop the research methodology and the participatory design process in detail. Expert interviews were conducted with social professionals working at the Alföldi Temporary Shelter. Through these exchanges, the authors gained a comprehensive understanding of the institution's system of rules and the general profile of its clients. It also became clear that strict regulations constrained the usability of the physical environment, primarily because of recurrent insect infestations. The authors also learned that the target group was generally characterized by learned helplessness, that many were victims of violence, and that they tended to have limited coping strategies.



Figure 8: Brainstorming session with homeless clients, Budapest, 2025. (Photo by Zsuzsa Darab.)

Based on insights gained during the preparatory stage, repainting the interior walls was selected as the central, insect-proof tool for the participatory intervention.

As a next step, individual interviews were conducted with ten participating female clients experiencing homelessness who were living in two shared rooms. The interviews focused on everyday life at the shelter, as well as on institutional routines, services, and rules. Their purpose was to gain insight into the clients' perspectives on life within the shelter. The most important outcome of the interviews—beyond insight into individual motivations and challenges—was building trust.

The participatory process took place simultaneously in the two residential rooms, but the groups worked separately. In both rooms, the wall repainting was preceded by two workshops. During these sessions, the clients worked on designing their shared room within the shelter. They discussed needs and constraints related to the space and then made joint decisions about possible modifications. Social workers who worked with the groups on a day-to-day basis participated in the discussions as facilitators. In a full-day implementation session, the clients finalized their ideas together, completing the design and execution process. It became evident that the participants were capable of sustained, focused engagement. They were motivated by the opportunity to shape their own space. The chance to make decisions—regarding colors, shapes, surfaces, and compositions—was especially memorable for them. They even articulated critical perspectives in making these choices. The participants demonstrated an unusually active level of collaboration. Individual final interviews were conducted with both the clients involved in the participatory process and the social workers who work with them on a day-to-day basis. While the interviews with the clients focused on their lived experiences, those with the social workers explored the dynamic changes observed within the groups. Clients reported that it was easy for them to commit and that they enjoyed the process, including the opportunity for both collective and individual decision-making. Several participants also proposed additional creative ideas. The social professionals observed that the

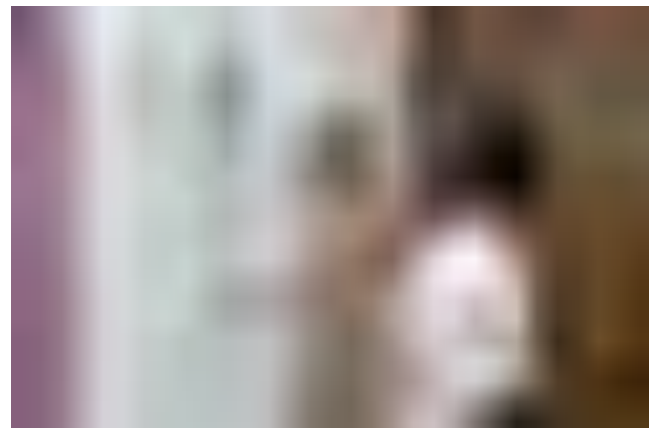


Figure 9: Personalization of cupboards by clients experiencing homelessness, Budapest, 2025. (Photo by Zsuzsa Darab.)

clients involved were unexpectedly active and cooperative, with their initial passivity gradually diminishing.

5.3 Disadvantaged Hungarian youth living in rural areas

During the summers of 2022, 2023, and 2024, a longer collaboration was carried out based on the second volume of the toolkit developed as part of the research project. Within the framework of the project titled CultiRider, the participatory methodology was used to bring together underprivileged Hungarian youth living in rural areas of Hungary and the intercultural community of Open Doors Hungary, consisting of young migrants, refugees, and Hungarian volunteers based in Budapest. Over the course of the project, collaboration took place at multiple levels: (1) among different organizations, (2) among participants from diverse cultural and social backgrounds, (3) across professional fields, and (4) between urban and rural locations. At the organizational level, the project involved three



Figure 10: CultiRider—the mobile community space, Tokaj, 2024. (Photo by Hanna Eichner.)

NGOs and a child-care center located in different parts of Hungary. The program brought together participants from more than ten countries as well as underprivileged Hungarian youth.

CultiRider is a camper van redesigned as a mobile community space that connects urban and rural communities, creating opportunities for dialogue about local issues and for identifying shared interests in global values. Through these connections, a network emerged—the places involved are no longer isolated entities but part of a broader network. The main challenge of the CultiRider project was to facilitate collaboration among culturally diverse groups toward a commonly accepted set of rules, including a shared space and a common language. Intercultural competence—understood as the ability to use cultural differences as an empowering resource—is a trainable skill [23] that must be actively developed.

Between 2022 and 2024, the project organized several team-building sessions and five short camps (ranging from two to five days), bringing together underprivileged youth and creative professionals from diverse backgrounds. Team-building meetings served two purposes: to help participants connect and to provide space for planning local initiatives through participatory design workshops. Involving young people at every stage of the process—from research and ideation to implementation—ensured that the outcomes reflected their needs and interests while fostering a sense of shared ownership.

After the team-building meetings, each short camp began with a preparatory site visit featuring informal activities such as icebreakers, community cooking, and brainstorming, held in locations including Ágasegyháza, Fót, and Tiszadob. Nonverbal visual methods such as collaborative portraits, “visual speed dating,” and memory games helped participants build relationships across linguistic barriers. Facilitated creative workshops encouraged active small-group participation and included photo walks led by local youth, a zine workshop on the theme of “help,” and screen printing with symbolic stencils. Refugee participants from the Open Doors Hungary community also led paper kite workshops for local children,

promoting intercultural exchange. Each camp culminated in a collective community project, such as a co-designed mural for a local donation shop, a large-scale co-designed board game in a public square, or a stop-motion animation on the theme of “magic.” The camps concluded with evaluation and reflection using visual tools such as picture cards and large-scale diagrams, thereby fostering open feedback and generating ideas for future collaboration.

5.4 Field testing the toolkit and typeface set in youth workshops

The prototype stencil and font set, completed in the summer of 2024, was tested during several youth workshops to assess its creative potential and usability in participatory educational contexts. Two key sessions yielded particularly valuable feedback: a foam stamp making workshop in Tiszadob and a tile mural workshop in Budapest.

5.4.1 Foam stamp making workshop. During the opening event of the 2024 CultiRider camp series, a self-awareness workshop invited participants to reflect on their personal strengths and aspirations using the “Identity Flower” exercise. Participants visualized their superhero selves using 5×9 cm worksheets included in the appendix to the toolkit. The provided stencils supported both ideation and execution. Participants used the stencils creatively, often diverging from their intended meanings to create unique compositions. They then cut out their craft foam designs and mounted them on blocks to use as personalized stamps.

Observations and participant feedback confirmed that the A4 stencil size was appropriate and user-friendly. However, the smaller pictograms elements could be accurately traced only with a fine-tipped pen; in future versions, either such pens should be provided or the pictograms slightly enlarged.

5.4.2 Tile mural workshop. During the opening event of the camp series, each participant received a single letter tile from the word

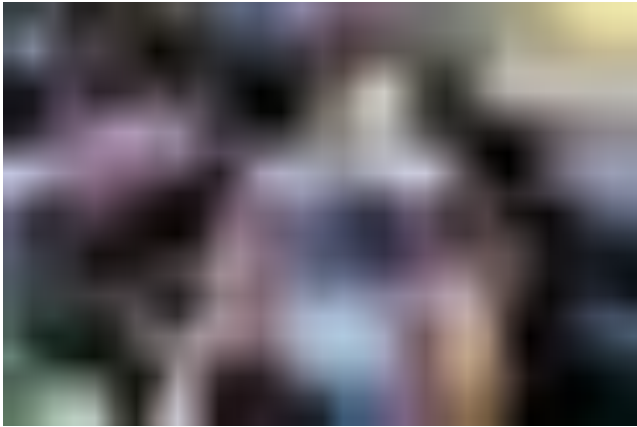


Figure 11: Foam stamp making workshop, Tiszadob, 2024. (Photo by the authors.)

“OPEN,” along with a matching 15 x 15 cm stencil. Without knowing the final composition, they were asked to decorate their tile based on their individual camp experiences, either through abstract designs or specific narrative scenes. The completed tiles were then assembled into a mural that now decorates a shared community space in Budapest.

Feedback from this session indicated that the large-format font stencils were somewhat difficult to handle, and that A4-sized versions would be more practical for similar activities. Conversely, the smaller 15 x 15 cm stencils proved effective and durable, suggesting their potential for further refinement. In addition, the presence of the sample stencil set on the tables encouraged spontaneous interaction; participants often handled the stencils whenever seeking visual inspiration.

Together, these workshops demonstrated the creative potential of the stencil and font toolkit to foster individual expression and collective identity formation. The insights gained will inform the next phase of the toolkit’s development, with an emphasis on enhancing usability and expanding its application in youth-focused integration contexts.

6 OUTCOMES

The outcomes and insights derived from the application of the toolkit are based on design research methods and semi-structured interviews with participants, as well as with social care professionals and representatives of the collaborating NGOs and institutions. The outcomes became visible at three levels: (1) workshop participants, (2) the professionals working with the target groups who were involved in the project, and (3) the organizations and institutions.

6.1 Participants

At the participant level, several positive outcomes were identified across all three cases reviewed.

Clients experiencing homelessness repeatedly stated that they had achieved unexpected outcomes since they had not believed that they could realize their own ideas. They expressed pride in

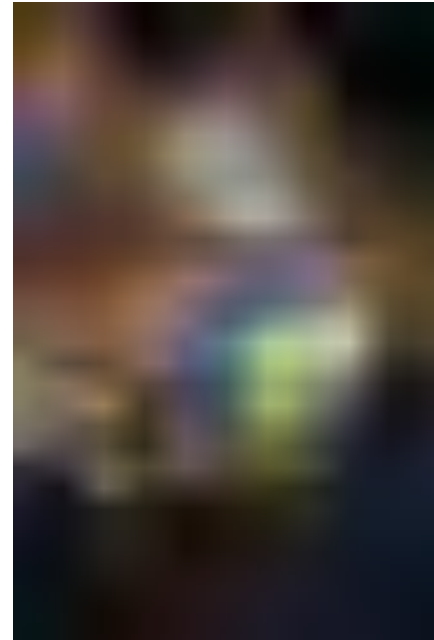


Figure 12: Tile mural workshop, Budapest, 2024. (Photo by the authors.)

their work and highlighted the joy of collective brainstorming and shared decision-making—something they had never practiced before as they had not previously collaborated with their roommates on any projects apart from routine cleaning tasks. At the outset, they voiced no criticism of the physical environment of the shelter; neither did they have any creative ideas for improving it. After completing the design and implementation process, they proactively suggested new ideas for future development.

For children living in state care, similar patterns emerged. Some developed a stronger sense of connection to their immediate environment: several began proactively changing their rooms, even though they had previously stated that they would not alter anything because they did not care about it. Some moved their beds and reconsidered where they would be most comfortable sleeping; others began tidying more frequently because keeping their space clean and orderly had become important to them. According to their feedback, the children found the lamp personalization exercise the most useful: “The bedside lamp is good because I don’t have to be afraid of the dark.” They also appreciated making the chalkboard walls: “The wall exercise was the best—because it stays there forever.” Most importantly, the children indicated that they had grasped the importance of the design process: “Think first, then create.” During the closing conversation, they proposed new creative ideas tailored to their temporary home environment. They also suggested that other children should have the opportunity to participate in such workshops, as these experiences could make them happier and help them feel more comfortable in their temporary surroundings.

In the case of the CultiRider project, young migrants became motivated to learn the Hungarian language and culture, formed new

friendships, and felt safe sharing their own cultural backgrounds with their Hungarian peers. In turn, the disadvantaged Hungarian youth participating in the project became more open and curious about other cultures and were motivated to learn foreign languages. Both groups developed intercultural and collaborative skills, while the mobile community space fostered a sense of safety and belonging.

6.2 Professionals

At the level of the participating professionals, feedback was obtained from mental health and social care professionals, as well as designers, not only on the outcomes of the collaborations but also on their use of the toolkit made available to them in printed form.

Based on feedback from caregivers and social workers who work directly with the target groups on a daily basis, it became clear that social workers themselves experienced the potential of participatory design workshops. In the childcare center and in the CultiRider project, they did so by observing the process, while in the homeless shelter they participated as co-facilitators. They stated that the collaborative work, brainstorming process, and implementation helped participants gain new perspectives, as well as a sense of control, ownership, and security in relation to their environment. Social workers also identified opportunities to learn more about the theory and practice of cooperative placemaking, visual communication tools, and participatory design. They noted that such knowledge could help them support their clients' everyday activities, contribute to the creation of more comforting environments, and strengthen community cohesion.

The prototype version of the toolkit was introduced to a diverse group of stakeholders, including designers, educators, and social workers. Initial feedback led to revisions to the typeface and to rewording the introductory text in order to improve clarity and accessibility. The final version was reviewed by professionals previously involved in Open Doors Hungary's initiatives, including social workers, child-care experts, psychologists, socially engaged artists, and other creative practitioners. These reviewers assessed the toolkit's usability within their respective fields, reflecting on its clarity, adaptability, and potential to support program implementation. Their feedback converged around several key themes. First, the toolkit's clarity and visual design were consistently praised: its layout and structured sections facilitated comprehension, particularly when addressing complex or abstract concepts. Second, reviewers emphasized the strength of its methodological foundation, noting that ethical considerations and thoughtful pedagogy were evident throughout; they also indicated that it helped them better understand the rationale behind exercises they had previously experienced. Third, the exercises and activities were regarded as readily applicable across a range of contexts, including psychological support, self- and place-awareness development, education, and community-based settings.

6.3 Leaders of partner institutions and NGOs

During the evaluation interviews, leaders of each partner organization—the childcare home, the homeless shelter, and the NGOs—reported increased pride among participants following the

participatory design collaborations. Clients experiencing homelessness began inviting guests into their shelter rooms, while children regularly used the chalkboard in the common room to leave positive messages for one another. The leadership teams identified the introduced methodology as offering a sustainable opportunity to support clients in understanding and proactively responding to the instability inherent in living in temporary state care. By fostering agency as well as creative and communication skills, the methodology can enable clients to modify their environment, create comfort, and thereby strengthen their resilience. The leadership acknowledged both the positive outcomes of the workshops and their long-term benefits, suggesting that additional groups be engaged in the future and that a training method be developed for the participating social workers. Within the participating NGOs, some members took on leadership roles, strengthening their organizations' capacity and becoming key connectors within their communities. The NGOs also expressed interest in learning and applying the creative, participatory methods used in the project, enriching their toolkit for future work.

7 Discussion

Developing and applying the two-volume toolkit has demonstrated its potential as a therapeutic, pedagogical, and community-building resource that bridges participatory design and non-design contexts. The toolkit supports inclusive, participatory work with marginalized groups—particularly those experiencing cultural change and loss of home—by combining participatory design with the expertise of educators, psychologists, social workers, and youth facilitators. Its emphasis on visual communication, placemaking, and adaptable exercises reflects an effort to democratize design tools.

Introduced to a diverse group of professionals in its printed form, the toolkit was refined based on their feedback. The final version was widely praised for its strong methodological foundation, practical relevance across educational and community settings, and its visual clarity. Respondents recognized its potential for integration into long-term development programs within social institutions, temporary homes, schools, community centers, and youth-focused organizations. This is particularly relevant for social workers, who may benefit from professional development opportunities that help them bring design-based methods into their practice.

Based on feedback and the practical application of the toolkit, several limitations were identified that point to areas for further development. The toolkit remains primarily text-based, which may present accessibility challenges in low-literacy or multilingual contexts. In addition, its inherently interdisciplinary nature—drawing on design, social pedagogy, and community engagement—may pose challenges for users unfamiliar with visual or design-based thinking. The toolkit has not yet been tested for standalone use without facilitation; further evaluation is therefore needed to determine how it functions when implemented independently by new users. At this stage, it is recommended for use in collaborative settings involving designer-facilitators and social care professionals.

A key recommendation was to include training or guided facilitation to ensure effective implementation. Respondents advocated for “training the trainers” programs to help professionals—especially social workers—adapt the methodology to their specific contexts.



Figure 13: Two-volume design toolkit for intercultural and marginalized communities. (Photo by the authors.)

To support broader access, they also recommended translating the toolkit into English and developing more visual or interactive formats to accommodate diverse literacy and language needs.

Overall, the feedback confirms the toolkit's practical value, while also emphasizing the importance of proper facilitation and guidance for successful implementation. In response, the next development phase will include translating the toolkit into English to support dissemination. Plans are also underway to create an online platform where users can access the toolkit, downloadable materials, and additional resources to aid implementation. These future developments aim to further integrate design-based methods into inclusive and interdisciplinary educational, social, and mental health practices.

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Infrastructuring Participatory Scaffolds with People with Profound Intellectual Disabilities in Community Gallery

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Abstract

While Participatory Design (PD) strives to include marginalized groups, individuals with profound intellectual disabilities (PIDs) remain systematically excluded due to cognitive and communicative barriers. This 18-months-long service design study in a Japanese community gallery co-designed adaptive art workshops with local stakeholders such as caregivers, artists, gallery visitors to scaffold PIDs participation. Through three iterative cycles of adaptive art creation, six participants with PIDs engaged via non-verbal interactions, co-creating artworks that shaped gallery inclusive practices. Public exhibitions and thematically aligned replica workshops extended participation by inviting visitors to reinterpret PIDs creations. We demonstrate how: (1) diverse stakeholders' situated expertise contributed to building participatory scaffolds; (2) artistic processes translated embodied expressions into public legibility; and (3) exhibitions and replica workshops created feedback loops of inclusion. By positioning PIDs contributions as both artistic outputs and catalysts for institutional transformation, we offer transferable strategies for adaptive art-making and propose a framework for art-based participation with people with PIDs.

CCS Concepts

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

Keywords

Participatory Design; Infrastructuring; Profound Intellectual Disabilities; Adaptive Art; Inclusive Co-Creation; Community Gallery

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1 Introduction

Individuals with profound intellectual disabilities (PIDs) represent one of the most marginalized groups in cultural and social participation [3, 3, 23, 65]. Characterized by severe cognitive, communicative, and often physical impairments, they are frequently excluded from community art activities due to perceived incapacity—despite evidence that artistic expression can be profoundly therapeutic and empowering for this population [2, 35, 38]. In Japan, where approximately 459,000 people live with intellectual disabilities (a number surpassing the visually impaired population)¹, recent progress in disability inclusion has primarily benefited those with milder impairments, leaving PIDs behind [16, 28]. This exclusion is rarely intentional but rather stems from systemic barriers—infrastructural, communicative, and attitudinal—that render conventional art programs inaccessible [7, 31, 33].

Community galleries in Japan, which serve as grassroots cultural hubs, exemplify this paradox grassroots level, to engage in cultural activities² [48]. Unlike traditional museums or activist-driven citizen galleries, community galleries (*shimin gallery* in Japanese) are designed to foster local cultural engagement through frequent workshops, local artist exhibitions, and participatory programs ranging from children's clay modeling to senior calligraphy [43, 44]. Their mission statements emphasize "art for all local residents", yet in practice, PIDs remain absent. The root issue lies not in a lack of goodwill but in an institutional reliance on normative modes of participation—verbal communication, fine motor skills, and independent decision-making—that inherently exclude those with PIDs [9, 58].

Situated in a Japanese community gallery, this research collaboratively co-developed adaptive art workshops for PIDs together with



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¹Data from the Ministry of Health, Labour and Welfare of Japan. Available at: https://www.mhlw.go.jp/toukei/list/seikatsu_chousa_b_r04.html (access date: 2025/1/10).

²Definition of Japanese community galleries: Website of the first community gallery—Yokohama Community Gallery https://cgi.city.yokohama.lg.jp/somu/reiki/reiki_honbun/g202RG00001221.html (access date: 2025/1/10)

caregivers, artists, gallery staff, and gallery visitors. The research team modified creative activities that align with PIDs' sensory, motor, and cognitive capacities. Six local residents with PIDs participated in three iterative workshop cycles, producing artworks that were later displayed in a community gallery. Over 18 months, we implemented and refined a four-phase participation framework: (1) co-designing workshops with stakeholders, (2) facilitating art creation by PIDs, (3) exhibiting their works publicly, and (4) hosting workshops on the same themes—hereafter referred to as *replica workshops*—in which community members engage with the same materials and creative prompts originally used by participants with PIDs. We argue that meaningful inclusion for PIDs requires infrastructuring—a process of building sustained relational and material scaffolds that make participation possible before formal engagement even begins [12, 39]. Because PIDs rely heavily on caregivers and support networks, inclusion in art must be understood as a shared practice sustained through interdependent relationships [36, 73].

We address two central research questions; **RQ1**: Who are the key stakeholders within the current community gallery setting, and how can they collaboratively build infrastructural support for PID-inclusive art environments? **RQ2**: How can the artworks created by individuals with PIDs foster deeper community participation? To explore these questions, this study adopts service design methodologies widely used in HCI [26, 80], grounded in Service-Dominant Logic (SDL) [25, 54, 55, 74]. Service design emphasizes that researchers should identify and leverage each stakeholder's unique expertise to co-create value through ongoing relationships and exchanges, thereby facilitating the transition from the *current state* to the *preferred state* and fostering sustainable participation [27, 81]. In practice, we employed stakeholder mapping, from the lens of the collaborative network dimension to understand the roles, interactions, and exchanges that take place within the community [37, 49].

Our work builds on Simplican et al.'s community participation model for intellectual disabilities, and contributes: (1) for PD researchers, we identify specific forms of community-based stakeholder expertise and demonstrate how these can be strategically integrated to scaffold the art participation of individuals with PIDs, (2) for community art institutions, we provide actionable strategies and a four-phase implementation model to transform spaces into platforms for meaningful PID participation, and (3) for practitioners, we offer tested workshop techniques to facilitate PID-public connections through art [14, 68].

2 Related Work

2.1 Infrastructuring and Scaffolding with People with Disability in PD

Participatory design has emerged as a strategic approach in accessibility research, such as engaging disabled communities in shaping inclusive technologies. Rather than limiting itself to functional adaptation, recent work incorporates participatory design fiction to foreground disabled users' lived experiences, creative agency, and expertise in imagining alternative technological futures [52].

More broadly, infrastructuring and scaffolding have emerged as key concepts in participatory design with marginalized groups.

Infrastructure, which was initially introduced to describe the often invisible technological and organizational systems that support social practices, systems such as networks, data repositories, or digital platforms. These systems typically remain in the background and only become visible when they fail or are disrupted [60, 72]. Early views treated infrastructure as a relatively fixed object, but PD scholars later began to emphasize its evolving and situated nature. This led to the development of the concept of infrastructuring, which reframes infrastructure as an ongoing, relational process that is co-constructed over time through use, maintenance, and adaptation [40, 71].

This processual view is particularly relevant in community settings, where social structures are often fluid, participation is heterogeneous, and goals may shift over time [39]. In such contexts, infrastructuring becomes deeply embedded in the community's everyday life and long-term interests, such as a study on grassroots dog-breeding community that gradually built their own information infrastructures [41]. Rather than being designed in a top-down manner by experts, these systems were developed incrementally by community members through shared practices, negotiation, and care for the "installed base"—the legacy technologies, data, and routines already in place [42]. These infrastructuring spans not only initial creation but also long-term stewardship and the alignment of diverse interests [62]. In this way, infrastructuring allows PD to more effectively address the complexities and uncertainties inherent in community life, especially when working with marginalized or non-traditional participants.

The concept of scaffolding—rooted in Vygotsky theories of situated learning—has been increasingly applied to participatory design and educational technologies to describe how structured support enables individuals to participate in complex tasks [78]. Emerging research in the context of IDs support, individuals with cognitive impairments can meaningfully engage with creative technologies—including AI-assisted tools for content generation [16].

2.2 Art Spaces as Sites of Participation

The positioning of art institutions as participatory spaces can be historically traced to Low's seminal framing of museums as instruments of democratic education. Low emphasized that museums should not function merely as repositories of cultural artifacts but as civic spaces where diverse publics engage in dialogue, learning, and co-construction of meaning [53]. Over the past eight decades, this vision has expanded into a broader paradigm in which art spaces—including museums, galleries, and cultural centers—are increasingly reimagined as active agents in fostering public participation and cultural inclusion. Within this evolving paradigm, artistic practice is not solely aesthetic but also relational and civic in nature [13]. Recent studies emphasize the importance of cross-institutional collaboration in art spaces. For example, partnerships between schools and artistic institutions can contribute to the development of inclusive artistic spaces, calling for "ongoing collaborative efforts" [59, 67].

2.3 Community Participation for People with Intellectual Disabilities

We approach the notion of participation for individuals with IDs through Simpican et al.'s ecological framework, the Social Inclusion Model for People with Intellectual Disabilities in Participation [68]. This model conceptualizes participation along two core dimensions: interpersonal relationships and community participation, which together provide a lens to examine how individuals with IDs engage in artistic and social activities (see Figure 1).

Interpersonal relationships refer to the everyday social networks surrounding individuals with IDs, including family, caregivers, and peers, which provide essential emotional and practical support. These relationships are particularly crucial as individuals age and face increased barriers to participation, such as the loss of primary caregivers or shrinking social circles [63, 70]. Community participation, on the other hand, can be understood across three progressive stages:

- (1) Presence: the physical presence of individuals with IDs in public cultural spaces—even without direct interaction.
- (2) Encounter: this stage involves some form of interaction between individuals with IDs and community members, ranging from incidental contact to intentional and sustained engagement.
- (3) Participation: individuals with IDs actively contribute to cultural and artistic activities, engaging in sustained exchanges and making tangible contributions to the community.



Figure 1: Social Inclusion Model for People with Intellectual Disabilities in Community Participation (Adapted from S.C. Simpican et al. [68])

2.4 Art Creation Activities for People with IDs

Art creation activities for people with IDs often build on art therapy's emphasis on nonverbal emotional expression and personal growth [4, 29]. Adaptive art extends this therapeutic potential by modifying tools and techniques to suit the diverse needs of participants, enabling self-expression and creativity even among those requiring special care [17, 28]. This approach stresses interdisciplinary collaboration among caregivers, educators, and designers to ensure accessibility and meaningful engagement [51]. However, focusing solely on support can limit participants' potential. A more effective strategy is to foster collaborative environments where

participants and stakeholders co-create through shared goals and mutual respect [47]. Our project follows six design principles—personalization, barrier removal, achievable goals, engaging activities, emotional support, and shared creation to promote inclusive, motivating, and sustainable art experiences for individuals with IDs [21, 45].

3 Methodology

3.1 Study Setting: Community Gallery Y

This study was conducted in collaboration with Community Gallery Y, a public cultural institution located in the center of Chiba, Japan. Established in 2013 and co-located with the community library, the gallery occupies approximately 5,800 square meters, making it the largest community art space in the city (see Figure 2). Widely known among the city's 200,000 residents. The gallery is situated in a suburban area with a high concentration of welfare institutions and is equipped with comprehensive accessibility features. Approximately 5% of the city's population has disabilities, including 1% with IDs, making the gallery a relevant site for exploring inclusive cultural participation.

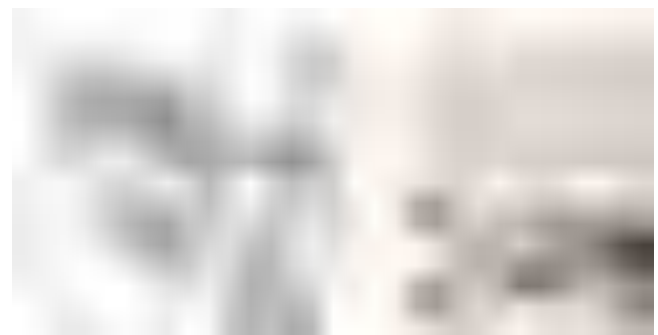


Figure 2: Layout of Community Gallery Y: Co-located with the Community Library in the Same Building

3.2 Participants & Ethical Considerations

We conducted three adaptive art workshops with a consistent group of six participants with PIDs, referred to as P1–P6. All participants were residents of a local community-based disability support center. Four life-support staff members (C1–C4) accompanied the participants and provided necessary assistance throughout each session. Additionally, two members of the gallery management team (M1 and M2) collaborated closely with the research team and actively participated in all three workshops.

According to caregivers, participants were largely non-verbal but capable of producing vocal sounds. Their movements were primarily instinctive and often accompanied by comorbid conditions such as involuntary tremors and motor irregularities. Due to these physical and cognitive characteristics, they required continuous caregiver support during all activities.

This study received approval from the university's institutional ethics review board. Given our long-term collaboration with the local disability support center, recruitment proceeded based on

established trust and mutual understanding. Written informed consent was obtained from participants' legal guardians or representatives for all activities. For the first session, caregivers provided detailed explanations and sought voluntary assent from the participants themselves before enrollment. Following this initial session, participants demonstrated enthusiasm and a strong desire to continue; their ongoing involvement in subsequent workshops was based on this observable excitement and sustained informal assent, supported throughout by their caregivers.

3.3 Positionality

The research team comprises members with diverse backgrounds and expertise, shaping our approach to this study on Community Gallery Y and our collaboration with the gallery and participants. Two authors have over five years of experience in adaptive handicrafts and curatorial work as practicing artists. Another has over ten years of experience in community-oriented fieldwork and inclusive cultural service design, while two others specialize in digital art creation and accessible digital experiences for inclusive well-being. All authors have experience co-designing with individuals with IDs across academic, community, clinical, and therapeutic contexts. None identify as having intellectual disabilities. Our culturally diverse team includes members from Asia, North America, and Europe. We collaborate with various Japanese social and cultural organizations, from small community galleries to larger institutions supporting disability inclusion. Our ongoing research explores how inclusive art programs impact community engagement [17, 28]. Our understanding of Japanese socio-cultural contexts has led us to embed community participation and collaboration into our work with Community Gallery Y, rather than focusing solely on individuals with intellectual disabilities. This approach leverages the gallery as a public platform for inclusive artistic expression and aligns with Japan's tradition of collective art-making and public display to foster social connection and belonging [34, 77]. This perspective also influenced participants' decisions to be featured alongside their artworks in this study.

3.4 Data Collection and Analysis

We present an overview of data collection and analysis for this eighteen-month program, which unfolded across three iterative cycles. Each cycle comprised four phases: (1) co-design, (2) workshops with participants with PIDs, (3) exhibition, and (4) a public replica. Phase-specific data collection strategies were employed to engage multiple stakeholder groups.

During the co-design phase, the Gallery Management Team participated in six semi-structured interviews, monthly check-in meetings, and three group discussions with local artists and a volunteer artist group. These dialogues provided a pre-intervention baseline of institutional practices, barriers to inclusion, and stakeholder expectations for engaging individuals with PIDs in community arts. This qualitative baseline mapping allowed us to contextualize the subsequent workshop interventions and to track changes across cycles.

To better understand participant contexts before workshop initiation, we conducted three unobtrusive fieldwork visits to participant institutions. These focused on spatial layouts, staffing structures,

and social routines. No interviews or surveys were conducted with participants directly due to their communication limitations; instead, we administered three rounds of caregiver surveys to long-term life-support staff. These surveys yielded structured, repeated measures on participants' support needs, sensory sensitivities, and prior experiences with creative activities. In contrast, interviews with staff and artists allowed for open-ended exploration of institutional constraints and inclusive design strategies. These complementary methods enabled us to cross-validate structured knowledge with contextual depth.

Throughout the workshop phase, all sessions were audio–video recorded, and detailed observational logs were maintained. We documented behavioral data such as returns to activity stations, task persistence, and dwell points to identify patterns of engagement. Artists and volunteers kept facilitation logs and buddy logs, while caregivers completed post-session questionnaires on each participant's level of involvement and affective shifts. During the exhibition phase, we installed a gallery-appropriate intercept survey board, which received 89 public responses.

Regarding the direct involvement of participants with PIDs in planning decisions such as theme selection, although participants could express assent through positive affect and sustained engagement, most had profound intellectual disabilities. These conditions limited their ability to participate in abstract or anticipatory decisions such as workshop theming. To ensure their perspectives were still represented, we adopted an embedded and iterative approach. Workshop themes were first introduced through embodied and sensory experiences, for example, tactile materials, sticker selection, and coloring tasks, and subsequent cycles were adapted based on participants' spontaneous reactions. For instance, one participant's repeated choice of flamingo stickers informed the development of the zoo-animal theme in Cycle 3.

We recognize the ethical complexities involved in proxy representation [1]. In line with methodological discussions emphasizing transparency and contextual sensitivity in proxy use [22], caregivers in our study—each having supported the same participant for over a decade—were treated as relational stakeholders rather than neutral informants. Their interpretations were triangulated with behavioral observations and artist logs to ensure accuracy and accountability. This approach aligns with inclusive research practices that value diverse expressive forms and relational ways of knowing [61], enabling us to incorporate participant perspectives meaningfully even in the absence of verbal communication.

For analysis, thematic analysis [15] was conducted following an inductive approach to identify emerging themes from the dataset. Initial coding was performed by the first author and iteratively refined through collaborative discussions with co-authors and stakeholder representatives to ensure the accuracy, resonance, and contextual relevance of the findings.

3.5 Initial Stakeholder Mapping: Positioning PIDs in the Community Gallery Network

To establish a pre-intervention baseline, we conducted an initial stakeholder mapping (see Figure 3), drawing on the data collection methods outlined in the previous section to engage diverse actors, including gallery staff, artists, life support staff, and community

Participant	Gender	Age	Disability Level
P1	Female	76	Profound Intellectual Disability
P2	Female	48	Profound Intellectual Disability
P3	Female	45	Profound Intellectual Disability with wheelchair use (due to fracture)
P4	Female	75	Profound Intellectual Disability
P5	Male	50	Profound Intellectual Disability
P6	Male	57	Profound Intellectual Disability

Table 1: Demographic Details of Participants

members. This process was informed by infrastructuring theory, which emphasizes the fluid and reconfigurable nature of systemic relationships [39], and guided by service design principles to reveal emerging patterns of interaction and support [26, 80].

Based on our findings, stakeholders were systematically categorized into three tiers:

Key Stakeholders are individuals integral to the daily functioning and strategic direction of Gallery Y and can be divided in the following sub-groups:

- (1) Gallery Management Team: Responsible for curating exhibitions, planning events, and overseeing the daily operations of the gallery.
- (2) Local Artists: Artists affiliated with the Community Welfare Center who regularly display their works, organize art events, and lead workshops at the gallery.
- (3) Regular Gallery Visitors: The primary user base of the gallery, which includes: (a) Junior Students (b) Elementary School Children (c) Seniors.

Primary Stakeholders are individuals or groups who engage with the gallery less frequently but still have specific and impactful roles within the community ecosystem encompassing both:

- (1) Life Supporting Staff: These are individuals working at the Disability Support Center, who visit the gallery occasionally, either as part of their professional duties or as citizens accompanying individuals with PIDs.
- (2) Volunteer Artist Group: Affiliated with the Community Welfare Center, this group of volunteer artists contributes to the gallery by providing artistic ideas, designing public art installations, and decorating community spaces. They also collaborate with the Disability Support Center to carry out art-related projects.

Secondary Stakeholders are community groups with limited engagement in the gallery’s activities such as:

- (1) Individuals with PIDs: Despite being part of the community, they have minimal interaction with the gallery, often lacking direct representation or targeted programs for engagement.
- (2) Research Team: Initially positioned as external observers, the research team sought to understand the existing dynamics and later engage with stakeholders to promote inclusion.

This initial stakeholder map was subsequently reviewed with representatives from key stakeholder groups during interviews, surveys, and public feedback sessions. Stakeholders acknowledged its value in articulating the relational landscape of the gallery context, reinforcing its role as a useful groundwork for aligning future efforts toward inclusive participation.


Figure 3: Initial Stakeholder Mapping of the Community Gallery Y

4 Study Design and Implementation

4.1 Co-Development Process of Adaptive Art Workshops with Stakeholders

This section elaborates on the year-long, iterative process through which we collaborated with diverse stakeholders to co-design adaptive art workshops. Our aim was to scaffold participatory, inclusive art-making experiences that meaningfully engaged individuals with PIDs. Figure 4 illustrates the evolution of this co-development journey. In each phase, new stakeholders were gradually introduced, expanding the ecosystem of care and inclusion.

- *Adaptive Art Workshop of First Cycle (Oct–Dec):* Collaboration began in October with the Disability Support Center, where we conducted surveys and interviews with life-support staff. Their long-term familiarity with participants provided key insights into communication patterns, sensory preferences, and behavioral tendencies, insights that informed all subsequent cycles. In parallel, local artists and gallery staff co-designed the initial workshop: a Christmas



Figure 4: Co-Development Process: Stakeholders Involved in the Adaptive Art Workshop Design.

Tree Fabric Collage, conducted in November and replicated during the December exhibition.

- *Adaptive Art Workshop – Second Cycle (Jan–May)*: In March, volunteer artist groups joined the collaboration, bringing fresh aesthetic perspectives and enhancing community engagement. Together, we developed the Glove Fabric Collage workshop, which culminated in a public replica session featured in the May exhibition.
- *Adaptive Art Workshop of Third Cycle (Jun–Dec)*: In September, gallery visitors contributed ideas for community art during a public feedback session. Their suggestions, especially those emphasizing local identity and shared affection for animals—shaped the final workshop design: Zoo Animal Handprint, held in November and replicated during the December exhibition.

To consolidate this iterative design across cycles, each workshop incorporated a replica session during the corresponding exhibition period. Maintaining a consistent structure across cycles helped participants—many of whom had limited prior experience in collaborative art-making, develop familiarity with the process, build confidence, and deepen interpersonal engagement. Structured repetition has been shown to support individuals with intellectual disabilities in establishing a meaningful presence within community settings [19].

4.2 Framework for Scaffolded Art-Based Participation with People with PIDs

Through three iterative cycles of co-development, we implemented a series of adaptive art workshops with individuals with PIDs, each followed by a public exhibition and a replica workshop for gallery visitors. Drawing from this process, we propose the *Framework for Scaffolded Art-Based Participation*, consisting of four interconnected phases (Figure 5):

- (A) Co-develop workshops with stakeholders,
- (B) Conduct workshops with PIDs,
- (C) Exhibit artworks in the gallery, and
- (D) Facilitate replica workshops with public visitors.



Figure 5: Framework for Scaffolded Art-Based Participation with People with PIDs

In the following sections, we use this four-phase framework to structure our analysis of each workshop cycle.

4.3 Cycle 1: Christmas Tree Fabric Collage

4.3.1 Theme Development. Prior research has shown that carefully prepared, seasonally themed, and personalized participation strategies are effective in supporting individuals with lower intellectual functioning [28]. Given the timing of the workshop near December, a Christmas-themed activity was chosen to resonate with the season and encourage festive participation. The workshop was developed collaboratively with the gallery management team and a local artist. Their input ensured the theme was accessible, engaging, and suitable for the participants' abilities. Besides, we chose fabric as the primary material for the workshop due to its affordability and familiarity in daily life, making it an ideal medium for individuals with IDs.

4.3.2 Application of Adaptive Art Workshop. Each participant received a personalized toolkit with easy-to-use materials—such as pre-cut fabric, decorations, safe scissors, and glue—tailored to their



Figure 6: Four phases of the first adaptive *Christmas Tree Fabric Collage* workshop: (a) initial design samples, (b) the workshop in progress, (c) the final exhibition display, and (d) the replica workshop with gallery visitors.

motor abilities. This reduced complexity and allowed participants to focus on creative expression.

Visual facilitation sheets provided step-by-step guidance for participants and their life supporters, ensuring clarity and ability to progress at an individual pace. The materials were carefully selected for affordability, durability, and familiarity, aligning with adaptive art principles. The workspace was arranged to encourage interaction between participants, life supporters, and facilitators, while individual workstations were provided to address diverse needs. Life supporters and the research team collaborated closely with participants during the workshop, offering personalized guidance to help them create Christmas tree ornaments.

4.3.3 Exhibition Curation. The artworks created during the workshop were displayed as part of the gallery’s special Christmas exhibition. The participants’ creations were incorporated into a collaborative display, with the ornaments decorating a shared Christmas tree positioned prominently in the gallery. Descriptive labels and accompanying materials highlighted the creative efforts of the participants, and raised the awareness of visitors.

4.3.4 Visitor Participation. During the exhibition, a replica workshop themed “Christmas Tree Fabric Collage” was held. Gallery visitors were invited to create their own Christmas-themed ornaments while observing the exhibited artworks. Using the original creations as templates, participants engaged in simultaneous viewing and making.



Figure 7: Four phases of the second adaptive *Glove Fabric Collage* workshop: (a) initial design samples, (b) the workshop in progress, (c) the final exhibition display, and (d) the replica workshop with gallery visitors.

4.4 Cycle 2: Glove Fabric Collage

4.4.1 Theme Development. Building on the success of the Christmas workshop, the second adaptive art session centered on themes drawn from participants’ everyday lives. In collaboration with a local volunteer artist group, we learned that gardening was a familiar and enjoyable activity for many participants, often involving planting and harvesting fruits and vegetables. The artists suggested using gloves as the primary base material—both practical and symbolically linked to gardening. Their popularity and ease of use in similar workshops made them especially suitable. This thematic choice allowed participants to engage creatively with materials rooted in their lived experiences.

4.4.2 Application of Adaptive Art Workshop. Following the last workshop, the adaptive art principles were again implemented to create an accessible and enjoyable experience. We updated the facilitation sheet based on insights gained from the Christmas workshop, providing clearer step-by-step visual guidance for participants and their life supporters. Observing that some participants experienced difficulties using glue during the previous workshop, we introduced magic tape for this session, as it was easier to manipulate. Additionally, we included pre-made fruit and vegetable stickers to reduce the cognitive and physical demands on participants, allowing them to focus more on the creative aspects of the activity.

The physical environment was also redesigned to foster greater collaboration. Each participant was provided with an individual

table and two chairs, arranged in a U-shape. This setup allowed life supporters and facilitators to offer prompt assistance when needed while encouraging interaction among participants.

4.4.3 Exhibition Curation. Same as the first exhibition, we displayed the participants' glove artworks during the gallery's summer festival exhibition, a community-focused event that welcomed many children and families. The gloves were creatively displayed on bottles, allowing visitors to easily view the entire design of each piece. These displays were strategically placed in highly visible areas of the gallery to attract attention and highlight the participants' creativity.

4.4.4 Visitor Participation. We have also conducted replica workshop during the summer festival exhibition. Building on lessons learned from the Christmas exhibition, where some visitors did not immediately recognize that the artworks were created by individuals with IDs, we took additional steps to emphasize their contributions. Descriptive labels clearly attributed the works to participants with IDs, and the research team provided on-site explanations to further highlight their talents and the adaptive art process.

4.5 Cycle 3: Zoo Animal Handprint Creation

4.5.1 Theme Development. The third adaptive art workshop took place nearly a year after the first one. Prior to organizing the event, we collaborated with the gallery to confirm the exhibition schedule and ensure the availability of the designated art creation space. It was determined that the artwork produced during this session would be showcased at a dedicated event focused on disability art, called *2024 Special Treasured Disability Art Exhibition*, rather than a more general exhibition linked to particular calendar events.

As part of our efforts to engage gallery visitors in the thematic development process, we referred to the stakeholder mapping outlined in Figure 3, which identified key visitor groups, including seniors, elementary school children, and junior high students who regularly visit the gallery. To better understand their preferences and interests, we conducted an artistic open survey to determine the desired themes, inviting visitors to share what they would like to experience in the gallery. A total of 89 visitors participated in the survey, expressing their thoughts on what they wished to encounter in the gallery. Based on the collected responses, surprisingly, 65.3% of participants expressed a desire to see "cute animals" in the gallery. Consequently, we decided to develop the workshop theme around "Animals," aiming to create vibrant and engaging decorations that would transform the gallery space into a lively, animal-themed experience.

4.5.2 Application of Adaptive Art Workshop. In the third adaptive art workshop, participants collaboratively created a 3m × 1m zoo-themed cotton canvas artwork within an hour. Each participant contributed 2 to 4 animal-themed pieces, resulting in 20 creations. Materials included animal templates, paint trays, markers, googly eyes, and non-woven fabric, which were used to enhance the artwork.

Unlike earlier workshops, this session involved collaborative artwork rather than individual tool kits. Participants selected animal templates, applied paint to their hands, and pressed their prints



Figure 8: Four phases of the third adaptive Zoo Animal Handprint workshop: (a) animal sample designs, (b) the workshop in progress, (c) the display at the 2024 Special Trusted Exhibition, and (d) the replica workshop with gallery visitors.

onto the canvas. Additional materials were provided for decoration, and steps were designed to ensure simplicity and accessibility.

4.5.3 Exhibition Curation. One month after the completion of the workshop, we edited the videos, and the artworks were showcased at the *2024 Special Treasured Disability Art Exhibition*, which attracted a total of 1,821 visitors over nine days. The animal-themed artwork was prominently displayed at the entrance of the exhibition (see Figure 8 Phase C). Additionally, a workshop video was produced and integrated with textual explanations to provide visitors with a deeper understanding of the creative process.

4.5.4 Visitor Participation. On the third day of the exhibition, we conducted the third replica Adaptive Art workshop with visitor participation. Due to space limitations within the gallery and the preference of the visitors, we aimed to provide them with a visual keepsake that they could take home as a memento of their participation. Instead of recreating the large canvas artwork, we opted for a handprint animal zoo on individual cards (see Figure 8 Phase D). The creative process involved applying ink to participants' hands or fingers, which they then stamped onto the cards. Participants further decorated their handprints with stickers and markers to transform them into animal figures. The workshop was held on a weekend afternoon and lasted for three hours, attracting a total of 223 visitors. Among them, 37 actively participated in the workshop, primarily families with kindergarten-aged children accompanied

by their parents or grandparents. Additionally, two visitors with physical disabilities (wheelchair users) participated in the session.

5 Findings

This section presents two key sets of findings drawn from *Framework for Scaffolded Art-Based Participation with People with PIDs*. First, Phase A and B illuminate how diverse stakeholder expertise was integrated to scaffold adaptive art-making environments for individuals with PIDs. Our findings reveal how each stakeholder distinct but interconnected roles in shaping accessible and meaningful workshop experiences. Second, Phase C and D demonstrate how the subsequent exhibition and replica workshops facilitated indirect forms of community participation for individuals with PIDs. This analysis is grounded in the Social Inclusion Model for People with Intellectual Disabilities in Community Participation (Figure 1), adapted from Simpican et al. [68]. Using this model, we examine how the *presence* of PID—created artworks in public exhibitions—and the embodied *encounter* they enabled during replica workshops—helped establish reciprocal relationships between creators and gallery visitors. Finally, we reflect on the evolution of the stakeholder ecosystem within Gallery Y across the three workshop cycles, assessing how this participatory process contributed to integrating individuals with PIDs into the gallery’s cultural and artistic life.

5.1 Stakeholders Scaffolding the Making

This section outlines how diverse stakeholders leveraged their respective expertise to scaffold adaptive art workshops for people with PIDs. We identify six distinct scaffolding roles that supported inclusive participation across organizational, creative, emotional, and relational dimensions.

5.1.1 Research Team Scaffolding Process Coordination and Relationship Building. The research team played a dual scaffolding role—coordinating the co-design process while fostering trusting interpersonal relationships with participants. As coordinators, they facilitated stakeholder mapping, organized feedback loops, and iteratively adapted workshop formats in response to participant needs and stakeholder input. Equally important was their role in fostering trusting relationships with participants, which enhanced motivation and sustained engagement.

Throughout the three workshops, participants consistently expressed their excitement and appreciation for the opportunity to collaborate with external researchers. In post-workshop surveys and interviews with the disability support center staff, many emphasized that working with the research team was one of the most enjoyable aspects of the experience and a significant motivating factor for their continued participation. During the first workshop, the novelty of engaging with external researchers was frequently mentioned as the most memorable aspect by the participants and their caregivers. Responses highlighted how the participants valued the new experience and the opportunity to interact with people outside their usual circles. One caregiver noted:

"The most exciting thing for participants was working with the research team."(C1-C4)

As the workshops progressed, participants’ focus gradually shifted from the novelty of working with researchers to engaging more deeply in the creative aspects of the activities. In the second workshop, while the collaboration with the research team remained a key point of enjoyment, participants also began mentioning other aspects, such as interactions with peers and artistic engagement. A caregiver observed:

"Participants from the center enjoyed conversations and interactions with students and staff, showing happy expressions."(C1)

By the third workshop, the feedback reflected a further shift, with participants displaying increasing independence and enthusiasm for their artistic creations. While working with the research team remained a valued part of the experience, more responses highlighted participants’ growing interest in their own creative expression. One respondent commented: "P1, I’m very surprised to see she proactively engaged in abstract expressions and were excited to create handprint animals with great enthusiasm."(C2)

The gallery management team also acknowledged the significance of these interactions. They expressed appreciation for the rare opportunity to collaborate with external researchers and noted how, over the course of the three workshops, participants became increasingly comfortable and relaxed in the gallery environment. As one gallery manager stated:

"There are few opportunities to collaborate with external researchers. Over the three workshops, participants became more accustomed to the setting, and I could see them gradually becoming more relaxed." (M1)

Additionally, the workshops fostered an atmosphere of international exchange and collaboration, which was acknowledged by gallery staff and caregivers. Their feedback highlighted the significance of cross-cultural collaboration and the positive impact of engaging with the research team:

"We appreciate the efforts of the international students and gallery manager for organizing this workshop after the COVID-19 pandemic. It was a wonderful opportunity for international exchange."

5.1.2 Supporting Staff Scaffolding Behavioral Interpretation and Emotional Comfort. Supporting staff, primarily caregivers, played a crucial role in shaping the workshops to meet the unique needs of individuals with PIDs. As the individuals most familiar with the participants, they provided invaluable insights that contributed to the creation of a supportive and accessible environment in three key areas:

Firstly, they offered detailed information about participants’ **artistic preferences** and practical challenges related to **material use**, which helped establish a sense of familiarity and comfort in the workshop setting. By incorporating elements that participants enjoyed, the research team was able to create an environment that encouraged active participation and minimized anxiety. For example:

"P1 enjoys drawing, particularly flowers." (C1 comment to P1)

"P6 prefers creating unique character illustrations." (C1 comment to P6)

"Glue might be ingested, so careful supervision is required during its use." (C2 comment to P3)

To facilitate engagement, materials related to these preferences were provided, and participants exhibited visible excitement upon recognizing familiar elements. P1 and P2, for instance, reacted enthusiastically to their favorite colors, exclaiming *"Ah! Flowers!"* when they encountered them.

Secondly, they provided valuable information about **environmental factors** that could impact participants' comfort and engagement levels. Participants with IDs often experience heightened sensitivity to sensory stimuli, which needed to be carefully managed within the workshop space. Caregivers highlighted concerns such as:

"P4 is sensitive to loud noises and raised voices, which can cause anxiety and inaction." (C2 comment to P4)

"P1, P4, as older participants, may not realize when they are tired and may continue working, requiring careful monitoring." (C1 comment to P1 and P4)

This information informed the design of quieter spaces and the inclusion of scheduled breaks, ensuring a balanced and supportive atmosphere.

Lastly, given that many participants had profound intellectual disabilities, supporting staff provided valuable guidance on recognizing and **interpreting non-verbal emotional expressions**. Their input enabled facilitators to respond effectively to participants' needs and emotions during the workshop. Observations included:

"P5 expresses happiness by making 'ii' sounds, jumping in place, or swaying their body." (C1 comment to P5)

"P6 indicates discomfort by repeating 'ka, ka, ka' without smiling." (C1 comment to P6)

Understanding these behavioral cues allowed facilitators to adjust their approach in real time, providing reassurance and ensuring a positive experience for all participants.

5.1.3 Gallery Management Scaffolding Institutional Access and Environmental Readiness. The gallery management team played a pivotal role in ensuring the successful implementation of the workshops by providing logistical and operational support. Their expertise was crucial in aligning the workshops with the gallery's broader exhibition objectives while navigating procedural complexities and public perceptions of inclusion.

Firstly, the gallery team provided valuable insights into the **administrative procedures** required to host art workshops involving vulnerable groups. They highlighted the necessity of securing official permissions and adhering to institutional policies and cultural regulations. For example:

"Organizing artistic activities in the gallery involves complex procedures, including official applications to the government cultural center for permission." (M1)

Secondly, they contributed valuable insights into the public **perception of inclusion**, expressing concerns about balancing visibility without creating undue pressure or stigma for participants with IDs. Their experience with previous events indicated that while

individuals with mild intellectual disabilities had attended past exhibitions, their visits were often passive, treating the gallery as a casual space for leisure rather than an opportunity for meaningful engagement. M1 and M2 noted:

"We were uncertain whether explicitly stating that people with disabilities were welcome might create unnecessary pressure or unintended spotlighting."

Furthermore, the gallery staff shared their extensive experience working with elderly visitors, many of whom face cognitive challenges such as dementia. They provided **practical suggestions** on maintaining participant engagement, M1 noting that:

"Participants sometimes lose interest halfway through or forget what they were doing, requiring frequent reminders."

Lastly, the gallery team offered insights on **thematic development** based on seasonal trends and community interests. Their recommendations helped align the workshops with community expectations and cultural traditions, ensuring relevance and engagement. For example, they suggested incorporating festive themes such as Christmas, which resonated well with participants.

5.1.4 Local Artist and Volunteer Group Scaffolding Creative Guidance and Social Recognition. Local artists and volunteer artist groups enriched the workshops by offering artistic guidance, material recommendations, and social support. They also provided inspiration and emotional encouragement to participants with IDs.

Firstly, as both artists and occupational therapists, they brought specialized expertise that enhanced the workshop's structure and accessibility. Their recommendations on **color combinations, size compatibility, composition, and material selection** helped refine the creative process and ensure the final artworks were visually appealing and accessible. For example:

"Using contrasting colors helps participants better understand the creation process and enhances the visual impact of their work." "Ensuring materials are easy to manipulate enables participants to engage more confidently with the creative process."

Secondly, local artists **leveraged their influence** within the community to promote the workshops. They utilized various channels such as social media platforms, local radio stations, and YouTube to share updates and showcase participants' artwork, thereby increasing public awareness and engagement. As one artist noted:

"Sharing these experiences on social media allows the broader community to appreciate the creativity and potential of individuals with IDs."

Thirdly, the artists offered **emotional support** through their presence. One of the artists who attended the first Christmas tree workshop observed that the artworks were loved by the local community. Their presence brought joy to the participants, as evidenced by P2 excitedly calling out, *"Look, look! It is my work!"*, and upon receiving the artist's compliment, she jumped with excitement. This supportive interaction helped create an atmosphere of collaboration further boosting participants' confidence and willingness to engage in artistic activities.

Additionally, volunteer artist groups, with their experience in facilitating accessible artistic practices, provided valuable inspiration for the workshop's theme development. Their ongoing exploration of diverse art forms for the local community informed the adaptation of workshop activities to be more inclusive and enjoyable. A volunteer artist shared:

"We would recommend you to use gloves fabric collage as the theme for your next workshop, since we have also held this type of handcraft activity among children. We also noted that the materials are simple and safe, which we believe would be equally suitable for your group of participants with disabilities."

5.1.5 Gallery Visitor Scaffolding Informal Feedback and Community Dialogue. Regular gallery visitors contributed to the workshops by providing input during the planning phase A and spontaneous engaging with participants during the Phase B.

Firstly, beyond the most popular theme of "animals," which shaped the third workshop, visitor feedback provided additional **potential suggestions** that inspired broader future gallery initiatives. Their input highlighted the need for more inclusive and engaging activities. For example:

"I wish to see more across-generational art workshops; just waiting for my grandson during the workshop is boring, either let them wait for me." "Gallery should have an avenue for international communication."

Understanding these needs plays a crucial role in shaping the gallery's inclusion efforts, facilitating that future activities are more community-driven.

Secondly, visitors engaged with research staff, providing **spontaneous encouragement** and feedback. During the third workshop, held in an open gallery corridor on a weekday morning, two seniors accompanied by a grandchild stopped to observe and expressed their interest and appreciation. They talked with research team:

"What are you guys making here ? ... oh, can I join as well...they all live in our community? Where is their supporting center?"

Such interactions helped raise awareness and recognition of the creative abilities of individuals with IDs, fostering a sense of appreciation and inclusion within the gallery space.

5.2 Exhibiting Scaffolding Community Participation

Building on Phases A and B, which scaffolded the making of artworks as a form of "presence" for individuals PIDs, Phases C and D aimed to foster the next level of participation—"encounter"—as outlined in the Social Inclusion Model for People with Intellectual Disabilities in Community Participation [68]. We analyze how the design of gallery exhibitions and the facilitation of replica workshops supported embodied and affective modes of *encounter*, and how these situated interactions contributed to reconfiguring the role of individuals with PIDs from that of passive recipients to cultural agents within the community.

5.2.1 Encountering the Exhibition. The first mode of engagement involves visitors who are initially attracted to the exhibition itself.

This pattern was prominent during the first and third exhibitions for regular seniors, which featured disability art and were held annually over the past decade. These exhibitions primarily attracted the families of artists and regular gallery seniors, who rarely missed new exhibitions. Visitors in this category were highly engaged with the exhibition's theme, relying on explanatory materials such as labels, posters, and videos to deepen their understanding.

During the second summer festival exhibition, however, we observed a different demographic of regular visitors—elementary school children accompanied by their families—who were immediately drawn to the vibrant and festive atmosphere. As they navigated through the exhibition, they encountered the ID artworks, particularly the colorful gloves, which piqued their curiosity. Upon learning that they could create similar pieces in a hands-on workshop, many children enthusiastically asked their parents to stay and allow them to participate. As a result, 48 children actively engaged in the workshop, highlighting the effectiveness of the exhibition in fostering interactive learning and engagement.

The engagement pathway for this group can be summarized as: 1) Visiting the exhibition → 2) Exploring displays → 3) Noticing ID artworks → 4) Discovering themed workshops → 5) Deciding on participation.

5.2.2 Encountering Artwork. Another mode of engagement involved visitors who were first drawn to the visual appeal of the artworks without initially being aware of the artists' disabilities. This observation was particularly evident during the Christmas exhibition, where six vibrant art pieces, displayed on a Christmas tree installation, immediately captured visitors' attention as they entered the gallery. Many were eager to take pictures with the installation, drawn purely by its aesthetic charm. The artwork itself acted as a powerful medium for fostering emotional connections and breaking down societal barriers, leading to a greater appreciation of the artistic abilities of individuals with IDs.

Interestingly, several visitors initially perceived the installation as part of the gallery decor rather than an official exhibit. However, upon learning from the management and research teams that the Christmas tree was, in fact, a featured artwork created by individuals with IDs from their community, they expressed surprise and curiosity. Many visitors asked insightful questions such as, "Are they here today?", "Can I donate?", and "How many times have they made similar works?" Their newfound awareness sparked a deeper interest in exploring the exhibition further. Given their admiration for the artwork, many visitors were eager to participate in the replica themed workshop, where they had the opportunity to create their own Christmas tree fabric collages inspired by the original exhibit. The hands-on experience allowed them to gain deeper insight into the creative process and appreciate the effort and creativity involved. Visitors shared their thoughts:

"I never realized they had such artistic talent, like fairy-tale..."

"The color choices and compositions are fascinating; I wonder how the IDs came up with these ideas."

The engagement pathway for these visitors can be summarized as follows: 1) Observing a particular piece → 2) Appreciating its aesthetic value → 3) Learning about the artist's background → 4)

Engaging with the broader exhibition → 5) Participating workshop participation.

5.2.3 Encountering Replica Workshops. The third mode of engagement emerged through participation in the art workshops. During the third workshop, participants were drawn to the activity of creating animal-themed postcards, focusing on their creations without initially noticing the connection to the exhibited artworks. When they asked for design references, researchers directed them to artworks by individuals with IDs. Inspired by these pieces, participants eagerly selected designs, expressing preferences such as, *"I want to make a tiger,"* or *"I want to make a swan."*

For those who attended the workshops directly, many were art enthusiasts who found the hands-on experience rewarding. It deepened their appreciation for the effort and creativity involved, sparking meaningful discussions and a stronger focus on the artistic process. One participant reflected:

"It's not that easy as imagined... I feel they put a lot of effort into this, maybe just like in their daily lives..."

The engagement process for workshop-focused visitors typically follows these steps: 1) Noticing the workshop → 2) Participating in activities → 3) Discovering related ID artworks → 4) Exploring the exhibition → 5) Gaining awareness of individuals with IDs' contributions.

5.3 Stakeholder Mapping Evolution

Figure 9 presents the evolved stakeholder mapping after all four phases of the participation framework. Compared to the initial version (Figure 3), the updated map highlights key shifts in stakeholder roles and relationships. Individuals with PIDs moved from the periphery to a central position through sustained collaboration, reflecting their growing visibility and influence. Non-PID stakeholders such as gallery staff and artists, while remaining central, became more proactive in supporting inclusive practices. The research team also shifted from external observers to active co-facilitators. These evolving positions were validated through repeated discussions with key stakeholders, including caregivers, artists, and gallery staff, and were used to guide future planning.

6 Discussion

6.1 Reconsidering "With" in PID Participation: Infrastructuring Conditions for "With"

While participatory design and human-computer interaction have long advocated for designing *with*—rather than *for*—marginalized communities, this principle becomes significantly more complex when engaging individuals with profound intellectual disabilities [8, 56, 69]. Recent PD discourse emphasizes co-creation, shared decision-making, and the rejection of proxy representation [11, 24, 75]. Our work suggests that, for individuals with profound cognitive, communicative, and physical impairments, initiating design with at the outset may not be ethically appropriate or practically feasible.

Given that many individuals with PIDs lack conventional communication modes and a conceptual grasp of collaborative decision-making, a rigid adherence to *with*—based approaches risks imposing responsibilities they may neither anticipate nor comprehend [32]. Rather than abandoning inclusive ideals, we advocate for a



Figure 9: Updated Stakeholder Mapping Following Implementation. Notably, individuals with PIDs have shifted from peripheral (secondary) roles to more central (primary) positions.

phased, infrastructural approach to participation—beginning with design for, through trusted proxies such as caregivers, to scaffold the necessary conditions for future *with*. This stance aligns with the concept of infrastructuring in PD, which positions design as an ongoing process of cultivating socio-material conditions that enable participation over time [39].

In our project, early-stage design decisions were co-informed by caregivers, whose situated expertise provided critical insights into participants' bodily rhythms, affective cues, and historical contexts. These proxies helped us structure accessible and resonant artistic experiences [66]. Importantly, we did not treat proxy engagement as a static or terminal solution. Rather, we approached it as prefigurative design—an infrastructural scaffold that allowed us to gradually attune to participants' expressive preferences. For instance, one participant consistently returned to a specific section of their painting with visible excitement; in response, we highlighted that element in the exhibition, integrating their non-verbal affective feedback into the public narrative.

In this context, participation need not be direct or verbal to be meaningful. Common comorbidities such as involuntary movements, sensory hypersensitivities, or vocal dysregulation may render direct encounters with unfamiliar community members overwhelming or even unsafe, especially in environments governed by neurotypical norms [6, 79]. As several caregivers voiced concerns about the unpredictability of such interactions, we foregrounded artistic expression as a gentle, mediated form of presence.

This also underscores the importance of preparing not only participants with PIDs, but also the broader public. Sudden direct

encounters with individuals whose bodies challenge normative expectations can evoke discomfort or fear in unprepared audiences such as kids [30]. Thus, inclusive education and awareness-building in public spaces becomes crucial to cultivating a shared capacity for co-existence [46].

Although we ultimately strive to facilitate more direct forms of designing with, our findings alongside prior work on non-verbal modes of participation [57] highlight the importance of preparatory, adaptive strategies for inclusion. Designing for does not necessarily mean designing over; when approached reflexively and relationally, design for can serve as a critical first step in infrastructuring environments where with becomes not only possible, but meaningful.

6.2 Community Art Institutions as Inclusive Infrastructures

Cultural institutions increasingly confront the limitations of traditional inclusion models, where accessibility often ends with physical accommodations or symbolic representation [5, 50]. The challenge is not simply to make space for marginalized groups, but to foster sustained relationships through art [18]. Our findings highlight three essential shifts needed to reimagine galleries as platforms for co-existence: a move from display to dialogue, where static exhibitions are replaced with relational formats like replica workshops that preserve creator agency while inviting visitor response; a shift from centralized expertise to interdependence, as caregivers become sensory interpreters, staff act as facilitators of uncertain encounters, and visitors transition into active co-creators; and finally, a reorientation from one-off events to long-term ecosystems, emphasizing memory infrastructures, flexible temporalities, and alternative metrics such as sustained attention or reciprocal gesture [20, 64].

These transformations surface key tensions in cultural democratization—between artistic integrity and radical openness, between honoring non-normative expression and avoiding its exoticization [10]. Inclusion, then, must be understood not as a fixed programmatic goal but as a continuous negotiation of space, time, and relational possibility. What enables this is not the promise of definitive solutions, but infrastructural patience: the willingness to build slowly, listen attentively, and dwell in the ambiguities of shared creation. production is imagined and practiced.

For new practitioners, it is important to know that inclusive work is not about quick fixes. It requires infrastructural patience to build slowly, collaborate deeply, and remain committed over time. Inclusion is not about doing more—it is about staying with it long enough for something meaningful to emerge.

7 Limitations

While the current stakeholder mapping captures the increasing centrality of individuals with PIDs within the gallery’s participatory network, this shift must be understood within the limitations of the current project:

- (1) Although we anticipated challenges related to verbal decision-making and adopted proxy strategies, we found that participants also expressed intention and preference through embodied behaviors, such as repeated gestures. However,

these forms of agency remain under-theorized and methodologically underrepresented.

- (2) Interactions between participants with PIDs and general visitors were largely mediated through artworks. While this indirect form of engagement was part of the intended design, it also limited opportunities for reciprocal exchange. As a result, participants with PIDs, though increasingly visible, did not become fully integrated into the central nodes of the gallery network even after three workshop cycles. Strengthening these connections will require deliberate scaffolding and long-term institutional support.
- (3) Although the project successfully established biannual exhibitions and regular workshops, the inclusive ecosystem primarily emerged during these peak moments. Public attention and participation tended to concentrate around exhibitions and workshops, with limited continuity between cycles. Future work should explore how inclusive participation can be embedded into everyday routines, institutional practices, and ongoing forms of relational care.

8 Conclusion

This paper explored how PD can be extended to include individuals with PIDs through collaborative engagement within local communities. Drawing on 18 months-long project in a Japanese community gallery, we proposed a *Framework for Scaffolded Art-Based Participation with People with PIDs*, which unfolds across four iterative phases. Our findings showed that Phases A and B focused on collaboratively involving individuals with PIDs in the process of art-making, fostering their embodied presence and expressive agency. Phases C and D, in turn, facilitated broader community participation by transforming their creations into interactive exhibitions and replica workshops, spaces that enabled diverse forms of social encounter and mutual recognition. This framework contributes both theoretical and practical insights. It calls for rethinking inclusion as a gradual, relational process rather than an immediate outcome, and positions artistic practice as a powerful medium for enabling participation beyond verbal or cognitive capacities.

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Rethinking Participatory Design as a Political and Pluralistic Practice. Agonistic Coexistence in Prison.

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Abstract

This paper critically examines a participatory design initiative developed within Storylab, a weekly storytelling workshop held in San Vittore prison (Milan). Focusing on the “20 Consigli” (“20 Tips”) activity, the project transformed a seemingly simple list of advice for new inmates into a platform for dialogue, reflection, and contestation. Grounded in feminist epistemologies, agonistic pluralism, and democratic design theory, the paper reflects on how participatory design can be reconfigured as a situated, political and pluralistic practice within a total institution marked by instability, asymmetrical power relations, antagonism, and forced coexistence. Rather than addressing consensus or solutions, the activity embraced dissensus and pluralism as generative forces that foster conditions for coexistence, changing the level at which conflicts occur to where the other is recognized as legitimate, even if in disagreement with “us”. The list of tips – an evolving and ambivalent artifact – served as a boundary object to promote debate, which helped in starting a shift from antagonism to agonism among participants. Ultimately, the paper argues for a re-politicization of participatory design practices that resists dominant, solutionist design paradigms, and instead centers dissensus, pluralism and participants’ embodied knowledge in the pursuit of a democratic coexistence within marginalized spaces.

CCS Concepts

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

Keywords

Agonistic pluralism, Prison, Participatory Design, Situatedness, Conflict

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1 Introduction

What does it mean to design democratic spaces that foster platforms for living together and debate in marginalized and total institutions? This paper offers a critical reflection on a collaborative design practice that emerged within Storylab, a weekly participatory storytelling workshop in a prison setting. It focuses on the “20 Consigli” (“20 Tips”) activity, which began as the collaborative creation of an artifact that gradually evolved into a collective debate exercise shaped by tensions, disagreements, and ongoing discussion.

Drawing from this situated, embodied experience, the paper engages with broader considerations on participatory design within marginal spaces and total institutions [1] such as prisons, where antagonism and conflict are ever-present. Design cannot be approached as neutral, linear or solution-oriented. Rather, it must learn to re-politicize its practices, to adapt to different temporalities, to focus on doing instead of solving. Designing within margins has to attune and listen to participants’ needs, while acknowledging the asymmetrical power dynamics and conflicts, including those generated by the design process itself.

In this context, design is embraced as an agonistic and relational practice, one that does not suppress conflict in the pursuit of consensus, but that embraces dissensus as a generative and reflective resource for living together without exclusion. We base our work on Mouffe’s [2] idea of consensus as a temporary hegemony that eliminates some voices that do not fit in. The output of the activity is not a harmonious or finalized guide. Instead, it is an ambivalent and contradictory object, a material trace of a process charged with plural and often conflicting meanings that coexist without the suppression of the other.

To critically unpack this experience and explore its broader implications, the paper draws on a theoretical framework that intersects participatory design, situated epistemologies [3], agonistic pluralism [2], and democratic design practices [4]. These lenses help us prioritize the political dimension of design beyond the neutral, universal, industry-oriented paradigms of dominant design, which cannot be the only answer when designing for democratic coexistence.

Within this framework, the prison is not simply the institutional background of the outlined practice, but a complex and regulated space marked by forms of oppression, structural asymmetries, and conflict that can profoundly challenge the role, posture, and tools of design. This conceptual lens enables a reading of the experience that does not aim at proposing a replicable model. Rather, it invites reconsidering how participatory design can be practiced, framed

and valued as a situated and relational practice that unsettles standardized notions of participation and calls for new forms of agency, care, and generative conflict.

Through the “20 Consigli” activity, we explore how participatory design can act as a site for a realistic encounter where plural and even opposing voices could coexist without being reconciled. This reorientation focuses on the potential of design not as a means to solve conflict, but as a way of shifting the level on which conflict takes place – from antagonism to agonism, from enemies to legitimate adversaries [2] – through creating spaces for debate and listening.

2 Theoretical framework

The article adopts a critical approach to current dominant design paradigms, focusing on the pervasive tendency towards solutionism [5] and consensus [6]. It explores alternative perspectives that could re-politicize participatory design in contexts of structural marginalization such as prison. Designing is framed as a contested and situated practice that engages with conflict and embraces partiality, rather than suppressing them or considering them as a limit in participation.

When dominant design tends to focus solely on solutions, it lacks critical reflexivity and aims for rapid answers to usually complex problems [5]. Such an approach is influenced by a general focus on tools, methods, and processes meant to function in every possible situation, hence universal, replicable, and scalable, reflecting a design tendency to understand reality in a singular and rational way [7]. Designers, for instance, tend to work to frame, map, and understand people – their behaviors, beliefs, how they interact with each other and their mental models – through a holistic understanding of them [7]. While these tools aim to capture the complexity of human experiences, this “view from above, from nowhere” [8, p. 37] – what Haraway defines as the *god trick* [3] – risks erasing diverse and marginal realities, placing little relevance on subjectivities, bodies, histories, and inequalities that inhabit local contexts.

Mainstream design practices often seek consensus-building – meaning neutrality and objectivity – among different stakeholders [9–11], while actively avoiding dissensus – understood as conflict and friction [9]. However, this tendency is inherently political and based on forms of exclusion [12, p. 9], and it may compromise the primary aims of participatory practices such as inclusiveness and a more equitable power distribution. As Mouffe [6] argues, “consensus” is always in favor of those already in power, reinforcing existing hegemonies rather than challenging them, and potentially silencing marginalized voices [13].

To work toward fairer and more just design practices and to challenge dominant paradigms that could disconnect design from its political and democratic potential, the notion of agonistic pluralism [2] offers both a critical lens and a guiding framework, recognizing conflict as a constitutive dimension of democracy and social relations. The nature of social and human relationships is not led by rationality and objectivity, but is characterized by “the political”, which is not rational, but driven by passions and power relations [6].

In opposition to antagonism, which considers the other as an enemy to be eliminated, agonism recognizes the other as a legitimate

adversary, enabling contestation within a shared democratic space [2].

In times of increasing weakening of public debate, agonism invites the creation of spaces where dissensus becomes a driving force for coexistence and calls for a rethinking of democracy in its ongoing tensions and multiplicity of voices.

This perspective finds correspondence in design approaches that reject methodological universalism and open up to processual, situated and non-resolutive forms. DiSalvo’s [4] concept of “design experiments” contributes to this shift in perspective, framing design as a means to collective investigation and inquiry into the practice. The experimental aspect of such an approach lies in embracing design not as something complete or fixed, but partial, ambiguous, limited and, because of this, always open to new reinterpretations [4], leading to handling design in a more open way.

By refusing closure and embracing partiality, this aligns with Vink’s [8] call to shift from professional-centric design to a more embodied, everyday design practice that does not neglect the already knowledgeable nature of the communities designers work with [4, 7, 14]. Adopting “the political” lens of Mouffe [6], it is easy to recognize the power dynamics and hegemonies in play, where the professional practices of design would silence and dismiss the voices of the community they are working with. Similarly to the shift proposed by Vink [8], but more focused on agonistic dissensus, Keshavarz and Maze [15] propose an “indisciplinarity” approach, which involves “a shared space of action/reaction, where no one imposes her or his voice, knowledge or discipline” [15, p. 17].

The approach outlined in this article is deeply rooted in Haraway’s [3] epistemology of situated knowledge, which emphasizes the value of partiality, situatedness and the embodied nature of all knowledges, along with the practices emerging from it. By avoiding externally imposed and universal objectivity, it enables a distance from the tendencies of dominant design. Hence, situatedness is essential for creating truly agonistic participatory design practices. However, Kraff [16] warns that, even when explicitly embracing agonism, design practices risk reproducing hegemonies during the process, especially when they adopt external, structured and rigid methods. Therefore, agonism cannot just be a theoretical intention but must be translated into embodied attentiveness, listening, and responsiveness, especially in sensitive and structurally marginalized contexts.

In the prison context, centering the participatory design practice on agonistic pluralism, democratic experiments and situated knowledge, does not simply give voices to people who have already been silenced – who may hesitate to participate due to past extractive experiences, cultural misunderstandings, or feelings of inadequacy [17] – but also creates spaces that resist silencing even further, fostering dissensus and pluralism in an agonist coexistence.

3 CONTEXT

Building on these theoretical perspectives, the paper explores how participatory design is reconfigured within the structurally marginalized and highly regulated context of San Vittore. Here, design as a situated and negotiated practice has to respond to infrastructural constraints, institutional tensions, power asymmetries and social tensions. The prison is not only a context but is an active

force that can shape what is possible. To understand the genesis and implications of the “20 Consigli” activity, on which this paper focuses, it is necessary to briefly introduce the specific context in which it took shape: San Vittore prison, its tensions and dynamics, and the framework of Off Campus San Vittore within which the activity was embedded.

San Vittore is located in Milan’s city center but, despite its central urban location, it remains socially and symbolically disconnected from the neighborhood. It mainly detains people serving short sentences and those with preventive pre-trial detention waiting for a verdict. San Vittore, as a prison, is formally structured to maintain strict order and minimize unpredictability, yet daily life there remains marked by uncertainty, instability, and frequent stress [18]. Besides having to deal with daily emergencies, here detainees often remain incarcerated far beyond the intended maximum of three months due to bureaucratic delays, sometimes for a year or more, while their legal status remains unresolved. This precarity, both temporal and legal, deeply affects the internal dynamics. The constant turnover of inmates, whose length of stay is quite unpredictable, complicates both participation and continuity in activities.

San Vittore exemplifies many systemic issues found in Italian prisons. At the end of 2024, it was the most overcrowded facility in the country, with a 225% occupancy rate [19] – meaning that seven inmates will share cells designed for three people. The majority of the detained people share complex vulnerabilities: more than half of the detained population are foreigners [20], many of them from North Africa, usually lacking documents or a residency permit, or family support. Rates of psychiatric diagnoses, substance dependence, and self-harm are also significantly higher than national averages [20]. Inmates are already quite excluded as a group, but with the latest laws in Italy, their rights to express their voices and dissent have been further limited [21, 22]. This condition reflects the consequences of the phenomenon of penal populism, which has risen in the last 10 years [23], producing increasingly punitive laws and rhetoric that reduce the political and expressive agency of incarcerated people, casting them as “unrecognized citizens” [24]. Even if inmates share the same condition, they are indeed a community “formed forcibly” [25] in what Goffman [1] calls a total institution. Hence, the community of inmates is not cohesive, but indeed fragmented. This implies the presence of mistrust and daily conflicts among them. The existence of power dynamics is also a key aspect of prison’s reality. These hierarchies, both informal and formal, have the potential of influencing the everyday life in San Vittore prison, such as relationships with the other inmates and the staff, and primarily the access to resources, such as activities, support, and external actors [26]. It is necessary to stress that within the prison context, every aspect of daily life and relationships is amplified and may result in violent reactions, both physical and psychological. Severe overcrowding, the need to share small and structurally inadequate spaces with other inmates, limited movement, lack of privacy, lack of contact with the outside world, and power differences between inmates are conditions that contribute to extreme tensions, making even minor issues potential triggers for unpredictable conflicts.

The activity discussed in this paper emerged within the project of Off Campus San Vittore, one of the four living labs opened in

2022 with the Off Campus Program promoted by Politecnico di Milano to foster deeper engagement between the university and the city’s territories. Off Campus San Vittore is the only one located within a prison, and it aims to reconnect the institution with the urban fabric, not only by rethinking its spatial structure but also by amplifying the voice of its inhabitants. The space operates as a collaborative hub, bringing together interdisciplinary researchers and students, prison staff, and incarcerated individuals. The initiative is led by Laboratorio Carcere, a multidisciplinary research group that combines expertise from the Design and Architecture and Urban Studies Departments of Politecnico di Milano. Within this setting, the design team coordinates participatory narrative-based design practices that range from audiovisual storytelling and experience design to narrative practices. The aim is to foster long-term collaboration, identify actionable opportunities, and create multimedia and transmedia narratives that challenge public perceptions of prison [25, 27, 28].

Within this broader initiative, Storylab is configured as a weekly workshop that provides a flexible, situated and relational space for participatory narrative explorations, where the building of trust and the emergence of the voices are continually renegotiated.

It started in May 2023 and engages inmates within the Young Adult section. Storylab takes place each Tuesday twice a day (morning and afternoon) and involves people aged between 18 and 26, who are mainly experiencing incarceration for the first time, and older inmates who are housed in the same section due to previous carceral experiences. Storylab’s aim is, through exploring inmates’ inner worlds, to provide expressive tools and collect narratives, empowering them and fostering dialogue and debate about detention within and outside the walls [29, p.120]. Drawing on Freire’s pedagogy of the oppressed [30] and Arendt’s understanding of storytelling as a political act [31], Storylab emphasizes the transformative potential of language and narrative in the process of self-determination, collective reflection and public discourse. It adopts a responsive and adaptive format and art-based methods such as collage, booklets, poetry, and other artistic means.

It is indeed from this responsive and adaptive nature that the “20 Consigli” activity took shape: a collectively written list of advice gradually became a shared pretext for dialogue, debate, and generative conflict.

4 THE CASE STUDY

4.1 A situated agonistic approach

This research adopts a participatory design approach, grounded in a situated and relational understanding of knowledge production. Working within the specific prison context described – characterized by instability, control and asymmetrical relationships – this activity aligns with the general objectives of Storylab within which it was developed, aiming to create dialogic spaces that allow multiple voices to emerge. The framework of Storylab as a permanent participatory workshop provided the grounds to develop this activity without having the ambition to achieve results in a limited time. Instead, it allowed participants’ needs to be accommodated by creating a time-space that was free from the control of academic project timelines. The approach embraced agonism [6] and the

generative potential of disagreement within collective practices, without aiming for consensus or predefined outcomes.

4.2 Researchers' positionality

Our role as researchers was neither neutral nor external to the context. As a group of female researchers with different experiences, we inhabit the space of Storylab through a shared but heterogeneous presence. We were not always all present at each session, but there were always at least three of us. We are all European women working within a male section – we differ in age, work experience, and academic status (ranging from Master's Degree students to PhD candidates, collaborating researchers, and professors) with backgrounds in Communication, Service, and Spatial Design. This diversity shaped the way we engaged with the group and the way the activity evolved over time. We played the role of facilitators, as well as co-participants and situated observers, contributing during the process with personal reflections and questioning, aimed at triggering collective thinking. Our engagement was never fully symmetrical – nor could it be – but it was sustained by continuous reflections on our positionality and power asymmetries embedded in the context. This meant acknowledging the structural gap between researchers and participants, which in this context meant between academics and inmates. By trying to establish relationships based on mutual trust, we aimed to open up space for mutual recognition, a fundamental condition for enabling truly agonistic encounters.

4.3 The activity within Storylab

Within this framework, the "20 Consigli" activity emerged as a reflexive and open-ended design exploration conducted around an iterative output that allowed peers to negotiate meanings, share experiences and always challenge assumptions. Although the activity was carried out within Storylab's space, it was not an activity focused on storytelling, but storytelling emerged informally as a practice of sharing.

The activity took place in the afternoon session of Storylab, from December 2024 to March 2025, with a total of 10 meetings of approximately 1.5 hours per week. It consisted of a participatory design activity aimed at the creation of a booklet offering tips for newcomers in the prison section on how to orient themselves in the section. Each session of the activity involved between 10 and 15 participants, most of whom had already established trust relationships with the research group through their ongoing involvement in Storylab.

Among participants, different kinds of relationships coexist. Some share the same cell, inevitably getting to know each other and sharing one's daily life, while others rarely meet outside the workshop since they live on two different floors. A few are "*lavoranti*" ("*workers*"), employed in the prison in various roles. At a relational level, this allows them to be recognized by others, to move between sections with more flexibility, and to have colleagues with whom they share a timetable. Some workshop participants work together, others participate in the same activities or educational program, while a few had already known each other before incarceration.

Relationships between inmates are stratified and the workshop becomes one of the few places where these trajectories can intersect, even if temporarily.

Attendance was intentionally kept open: Storylab does not require continuous participation, allowing for a dynamic and porous group structure. This fluid composition also reflects the broader high turnover condition of the San Vittore context. As a result, the group of participants was never fixed, and each session welcomed both returning and new individuals, ensuring a certain diversity among participants. The afternoon session is designed for both those who have gained some knowledge from the morning sessions, as well as for older or more mature individuals. This tends to welcome participants with fewer language barriers, creating favorable conditions for collective processes of co-creation, reflective and attentive listening.

We played an active role during the sessions by initiating themes or questions to stimulate discussion, mediating when necessary, and actively participating in the conversations. This involvement was complemented by the systematic collection of ethnographic field-notes, aimed at documenting the interactions, emergent dynamics, and contextual specificities of the activity. Overall, our approach can be described as an empirical, qualitative inquiry grounded in participant observation and ongoing reflexivity, adapting tools and methods to the evolving dynamics and needs of the context.

4.4 The activity: "20 Consigli"

The activity emerged from an earlier, informal list of co-written "tips for newcomers", elaborated by a group of inmates during the summer session of Storylab in August 2024. This initial list aimed to reduce the friction that arises when a new prisoner enters the Young Adult ward for the first time. Inevitably, every new arrival involves cell changes and therefore the search for a new balance in relationships and coexistence between people. This situation becomes even more tense when the newcomer is experiencing imprisonment for the first time in his life: personal processes of adaptation, acceptance, and learning how to navigate everyday life within the prison environment further intensify the overall instability.

Initially left as a collection of handwritten notes, in December, the list was reactivated by the research team in response to the recurring emergence of similar themes during informal conversations with the new group of inmates, with the intention to close the activity and create a shared output. The explicit aim of the activity was to collectively revise and expand the list to make it more representative of the lived experience of the current group and produce a small booklet to be shared with new arrivals in the facility. The activity was originally meant to conclude the ongoing workshop cycle before the Christmas break, ensuring continuity without leaving unfinished work during a period of interruption. The initial list, made up of 20 tips, thus functioned as a boundary object [32], able to provoke discussion and to lead the creation of the final artifact. Each session consisted of the review and discussion of the tips, starting from a printed draft distributed among participants and leading, most of the time, inmates to initiate the activity by freely expressing their thoughts.

During the first list review, which would have become the first session of this project, the collective reading of the first tip immediately prompted a response of disagreement from the group. The first advice “*Do not see, do not hear, do not speak*”¹ is a saying very well-known and prevailing among prisoners. This saying is based on the common belief that it is better not to engage with others’ business, and to keep your mouth shut about what happens to others, reflecting the logic of silence and non-intervention traditionally associated with the prison environment. Contrary to our expectations, the group strongly disagreed with this, highlighting this behavior as a critical decision and backing the opposite stance: the need for support between inmates, to talk between one another, and to not judge. As a result, it was rewritten as “*Communicate and do not judge*”². The advice made evident an underlying dissensus on such matter: this was not among the participants of the first session, but it showed a tension between the inmates that created the list and those revising it.

In that first session, as we continued reading, each sentence opened room for objections and disagreement. This revealed the limitation of our initial assumption of the activity as a quick and productive process, aimed at producing a tangible outcome within a few sessions. However, since the first session was short, due to its introductory nature and the limited number of participants, we only grasped the potential of the activity to be further developed in the following meetings.

The second session took place in January, on the restarting of activities after the Christmas holidays. This session and the following one expanded the diversity of participants, including other inmates who usually participate in the morning session of Storylab: younger and with higher linguistic barriers because of a migratory background. Those moments marked a turning point, reframing the activity as a space of contestation and reflection, beyond a neutral collection of tips. The inclusion of new participants in the activity enabled a rich exchange because of their different ages and cultural backgrounds. We recognized it wasn’t just the creation and reviewing of a list – as we initially conceived the activity – but rather the creation of a platform where discussion and debate took place by reading each tip one at a time out loud. As a matter of fact, what happened during each session was that, after reading a tip, one or more people would react by saying what they thought and opening up about some of their experiences. As soon as this emerged and we sensed strong engagement, we adapted the activity in a way that would make room for their interpretation. We began printing for each session the 20 pieces of advice updated from the session before, both in Italian and Arabic (the most common language in San Vittore Young-Adult section after Italian). This entailed that each inmate could have the list at hand to think the suggestions through, take notes and engage better in the discussion. The iterative refinement of the text allowed latecomers and newcomers to actively participate and challenge prior versions. Thus, from the sessions after, we started to have a more structured approach and a more appropriate space to host the activity. The presence of printed text (Figure 1) in both Arabic and Italian was crucial not only for comprehension but also for recognition. Some Arabic-speaking



Figure 1: Printed list in Italian with notes by the authors

individuals appreciated the inclusion of their own language, while others corrected translation errors, engaging in the co-production of meanings.

Throughout the process, some figures emerged on whom we could rely. They were more effective at engaging the people in the workshop and, by keeping up with the activity, were able to explain and guide the others more clearly. The activity turned out to be a way for inmates to confront each other and to trigger real listening and peer-to-peer dialogue.

Many themes and topics surfaced and were touched upon. Participants would express their stance on the tips starting from personal stories, enabling storytelling as social practice [25]. Some tips even contributed to having a deeper emotional dimension that we had not anticipated. For instance, the theme of how to handle anger surfaced. The original point suggested: “*If the pot gets full, find a way to empty it: talk to someone; get out in the air, pray, and sleep.*”³ Before deciding how to refine it, this point sparked a conversation about self-control. A younger inmate shared that he struggled to manage his anger, which he identified as a key reason behind his imprisonment. In response, an older inmate with many years of experience inside disagreed with him but expressed understanding. He said that he had once been just like the younger man and now deeply regretted it. What unfolded was more than just a generational clash. It was a collision between two mindsets: one rooted in the immediate, dominant belief that respect must be defended

¹Original Italian: “*Non vedere, non sentire, non parlare*”. Translated by the authors.

²Original Italian: “*Comunica e non giudicare*”. Translated by the authors.

³Original Italian: “*Se il vaso si riempie trova un modo per svuotarlo: parla con qualcuno; esci all’aria, prega e dormi*”. Translated by the authors.

through violence, and the other shaped by the belief that reacting with violence and seeking revenge is not the answer. During this discussion, the two, even if in disagreement, listened to what the other had to say. It was important to have an older, respected figure showing himself vulnerable to the youngest of the group, opening a more horizontal space. The discussion fostered mutual recognition, bridging the perceived distance in perspectives and promoting an understanding of the underlying motivations behind each stance. Such recognition and empathy became obvious as both were moved by the end of this interaction.

Throughout this activity many other interactions emerged where contrasting voices clashed, resulting in real participative and democratic conversations. Each tip on the list revealed a potential conflict or tension that can exist in everyday prison life.

In addition to generational tensions, the activity brought to light many other differences in thinking among prisoners, fostering intense debates. For example, other highly divisive issues were:

- The issue of self-harm: a frequent habit, especially among young prisoners of foreign origin and without documents. It's a demanding behavior that seeks to bridge the gaps in opportunity created by differences in hierarchy and power among prisoners – for example, requesting phone calls home or family visits. The advice *"If you receive bad news, be aware that you cannot perform miracles. Harming yourself does not help to resolve the situation"*⁴ opened up a discussion between very different points of view on the issue based on culture and age. As a matter of fact, the conflict was mainly between older Italian, and young inmates with a migratory background.

- The issue of psychotherapy: highly divisive, as some inmates believe that those who take psychotherapy medicines – even if recommended by a doctor – are not lucid (*"Until you are lucid, you cannot face the problem"*⁵) and do not approve it – to the point of wanting to exclude those who use it from their cell. However, for some, it is necessary to take psychotropic drugs to better deal with their experience in prison. While in other examples it was more explicit the type of people between whom the conflict was present, Italian-foreigner or older-younger inmates, in this case it was less evident.

- The issue of sharing spaces, especially in relation to prisoners experiencing prison for the first time, emerged in some tips: *"Respect yourself and others"*⁶ and *"Respect other people's things and spaces, both physical and emotional"*⁷. On the one hand, it opened discussions related to the sharing and management of physical spaces and items: issues of hygiene or the division of daily tasks of tidying up and cleanliness. On the other hand, it raised relational issues. Another piece of advice mentions *"Non accupare"*, which is typical prison terminology that could be literally translated as *"Don't make it darker"*, meaning trying not to bring your negative mood into your relationships with others. Such issues showed a friction between people who already had a previous experience of prison and those who were in their first incarceration. But they

⁴Original Italian: *"Se ricevi una brutta notizia, sii consapevole che non puoi fare miracolo. Farti del male non aiuta a risolvere la situazione."* Translated by the authors.

⁵Original Italian: *"Finché non sei lucido non puoi affrontare il problema."* Translated by the authors.

⁶Original Italian: *"Rispetta te stesso e gli altri."* Translated by the authors.

⁷Original Italian: *"Rispetta le cose e gli spazi altrui, sia fisici che emotive."* Translated by the authors.

also showed a friction between cells, because of the habits of their inmates. These various themes were not dealt with just once, but were discussed on many occasions. Each session, the group would go on or rework points that had already been discussed. This process of iterative review gave space to everybody, newcomers, and people who did not talk before. It also reinforced the idea that the output was not a fixed artifact, but a flexible, evolving means open to change. And most importantly, it stressed the fact that everyone was able to express themselves.

This was achieved by facilitating the activity and ensuring that participants took turns speaking. While in the first sessions there were more people speaking on top of each other, by the end of the activity this no longer happened, even when divisive issues surfaced. Deciding the order of each piece of advice in the booklet became a significant part of the activity, too. Discussing why one piece of advice should go before or after another sparked debates and exchanges. Still, we remained sensitive to the group's energy. When collective energy and interest began to decline, we decided to close the activity and wrap it up.

The final sessions were about refining the content, printing the final version of the booklet. Time has been dedicated to reflecting on some final mutual considerations. What emerged from these last sessions was a general sense of appreciation from the participants. Some even shared their desire to create other booklets regarding other topics, opening possibilities for future projects:

"I want to make a booklet for when you are outside of here."⁸ – A.B.

Many expressed how they enjoyed and valued the process much more than the potential usefulness of the output. The process, according to them, was a chance to dialogue on many matters, to reflect on themselves and their experiences.

"It's not that I needed the booklet because we give it to the newcomers, who might laugh in my face, not read it, use it to roll cigarettes. But it's useful for us who are doing this, for the awareness process involved in doing this thing." – V.D.B

At the end of the last session, we asked them to try giving the booklet to new detainees, who had just entered San Vittore, as a way to test it. But we had no feedback, so we don't know whether the booklet was or will be useful. What we do know, however, is that its creation was a small yet meaningful process.

5 DISCUSSION

5.1 Agonistic analysis

The project of "20 Consigli", by being a participatory design activity, dealt with different individuals who participated together. Yet, as mentioned before, the community we are working with is not a voluntary and cohesive one, even if it shares the same condition of being inmates. This implies the presence of various levels of antagonism among them. In fact, there is a wide range of power dynamics that come into play in the inmates' forced community. Moreover, trust among them is scarce, and the space in which the

⁸All quotes from inmates were originally spoken in Italian and are reported here as literal translations by the authors, preserving their informal tone.

activity took place – as well as the relations among those involved – is deeply shaped by persistent tensions and hostile conflicts.

Over time – both within the permanent space established by Storylab and through our daily presence in the Off Campus San Vittore space – we observed, directly and indirectly, various dynamics of conflict and friction. Tensions may arise, for example, due to different cultural backgrounds, a sense of belonging to different groups, forced cohabitation and sharing, relationships with prison staff, type of crime, intergenerational issues, or more personal conflicts. Over two years of situated engagement in this context, we have witnessed disputes between inmates that appeared to erupt suddenly – sometimes even violently – within the workshop activities, as well as the repercussions of broader dynamics on participation. For instance, we observed inmates who were visibly unsettled by the presence of others to the point of refusing to speak or leaving the workshop space. Likewise, the absence of an inmate who were usually present and actively involved could indicate broader tensions with other inmates, within the section, or external circumstances that had deterred participation.

In this scenario, looking back at this specific activity, we argue that it represents a rich example of an agonistic practice of participatory design. It does so by building a space where people are “sharing a common symbolic space within which the conflict takes place” [33, p.20]. A space where the other becomes a legitimate opponent “with whose ideas we are going to struggle but whose right to defend those ideas we will not put into question” [2, p. 755].

From our empirical observation, this initial shift from antagonism to agonism occurs through sharing their fragilities, past experiences, and desires. By exposing these aspects, participants reduce the distance between one another. As a result, the “other” stops being a distant figure and starts to share something in common with “us”, resonating with our own experiences. This bridging process created the shared symbolic space mentioned by Mouffe [33]. It does not mean that conflict and tensions are erased, since they are the basis of any social relation [12], but the terrain on which they exist is a different one. A clear example is the case of the older and the younger inmates. Their discussion did not start as an agonistic one. Yet by listening and sharing each other’s stories and vulnerabilities, their disagreement shifted from one of enmity to an adversarial one. They did not agree, but they no longer perceived each other as an “enemy to be destroyed” [2].

Listening and narration become the means of a “process of joinery” [4] of the community we are working with. Listening is almost non-existent in the San Vittore context. There is an ever-present background noise: loud metallic sounds from gate slamming and heavy keys, prison staff and inmates raising their voices, and echoes from other wards. In such an environment, people gradually get used to not listening, trying to bypass the constant noise. Moreover, many of the inmates did not receive a school education – the first place where people learn to listen and to focus their attention. Hence, working on listening becomes key in creating a space of coexistence where tensions can be navigated and negotiated. After that, being able to open and trust the others in receiving your stories, to empathize and resonate with them [25], creates the foundation to make the shift and to build the terrain on which conflict can be played out and contradicting ideas can coexist, without the need to silence the other. Therefore, the transformation of antagonistic

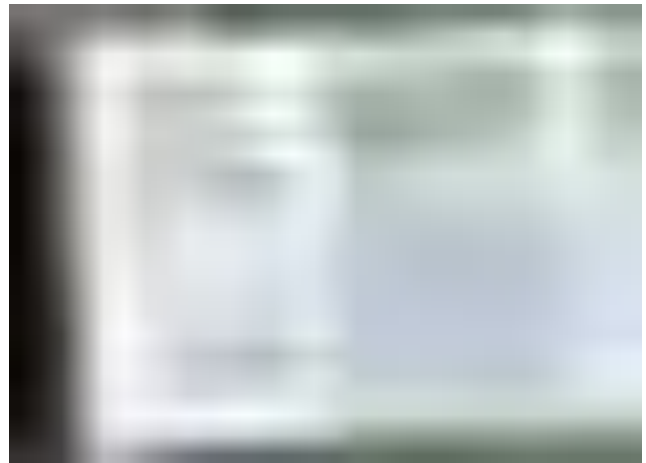


Figure 2: Final booklet tips n. 9-10

feelings into agonistic ones is deeply relational because, as we could observe, there were changes in the relationships among inmates. In this case, we consider our practice as relational [35], since it works in shaping relationships. Some inmates, for instance, expressed explicitly how this experience was an opportunity to learn more about the others and to resonate with one another, especially with people with whom “during the day you do not have anything in common to talk about”. In other cases, we noticed subtler, longer-term relational changes among inmates. An older Italian inmate had often shown his dislike for a younger inmate with a migratory background, both before and during the activity. Yet, by the end of “20 Consigli” and at the beginning of a new one, we observed a shift in the relationship between the two, especially from the Italian inmate’s side. If before he used to diminish everything the other had to say, now he is open to letting him speak and valuing what he has to say. This is particularly relevant in a context where, based also on our own experience in prison, the line between an argument or a general dislike and a violent conflict is a thin one.

Through the activity “20 Consigli”, Storylab reveals itself to be an agonistic space, an arena where agonistic encounters can unfold [36, 37]. It is a space where debate and participation are infused with “passion, imagination, and engagement” [36, p. 109], where the goal is not to solve, but to embrace argumentation, publicizing [38] – making something public – and friction without forcing consensus. In the “20 Consigli” activity, this happens through discussion and the sharing of one’s story or perspective prioritizing passion over rationality. Since rationality is not at the core, no one is excluded for being unreasonable [2]. The innate plural nature of our societies is accepted and welcomed: contradictions, diverging cultures, and conflicting visions coexist without constantly denying one another’s rationale or legitimacy [38, p.10]. Consequently, participants and their multitudes coexist in an agonistic way, reflected in the booklet.

Each piece of advice emerged not as a neutral or rational guideline, but as the result of passionate debate among inmates. This led to having tips containing different options on how to tackle a certain situation, some of which even directly contradicted each

other, embodying an agonistic coexistence of diverging instances. Consequently, the “20 Consigli” booklet (Figure 2) embodies agonistic pluralism as it reflects not a singular truth but a collection of voices, often in tension with one another, embodying the messiness, the paradoxes, and the plurality of lived experience. In addition, the booklet catalyzed discussion and engagement “in questioning and contestation” [39, p.114] rather than offering a fixed or universally accepted set of rules. Every tip was open to being contested and continuously changed, making the artifact of this activity a boundary object [32]. Ultimately, the booklet displays how dissensus was placed at the core of the process, refraining from forcing consensus, as a way to respect each voice.

5.2 Designing beyond dominant design

The work of “20 Consigli” demonstrates various practices fostering participatory approaches oriented toward greater attentiveness to power and responsibility, and shows alternatives to dominant design, questioning it.

First and foremost, as discussed, the activity went beyond consensus. By centering on dissensus, it made room for voices, avoiding the exclusionary nature of consensus as the establishment of a hegemony [6]. Embracing dissensus also entails acknowledging and accepting conflict, power dynamics (“the political”), and instability as inherent parts of social relations [6]. This stands in contrast to the rational and neutral nature of dominant design.

Second, by fostering a situated [3] practice based on what emerges through the process, we argue that the adopted participatory approach helped avoid silencing and erasing participants’ voices. The focus on professional-centric, universal, objective, and replicable frameworks and methods not only dismisses the embodied knowledge of the community [8], but also fails to recognize “the political” [6] dimension of designers’ practice. As noted, although we are always open to participants leading and influencing the activities, we initially approached the activity with different expectations. At first, the activity did not seem to progress as planned: we appeared to get stuck on each piece of advice of the list, unable to move forward and reach the intended tangible result. Our focus was still output-oriented, reflecting dominant design paradigms [5] often internalized by designers through their formal education. However, once we grasped how participants were interpreting the activity, we followed and adapted to them, valuing their practices, not imposing our discipline and knowledge and accepting to give up part of our control over the activity. Therefore, our work aligns with the “indisciplinarity” approach of Keshavarz and Maze [15], and pursues the situatedness of Haraway [3]. This entails an initial shift toward decolonizing participatory design [40]. Designers – by imposing their culture and methods as superior and the only way of making – colonize and silence other ways of making [7]. Instead, within the activity of “20 Consigli” no knowledge was forced on the participants, as we recognized them as already knowledgeable [3, 8]. Hence, through this project, we distance our practice from the tendency of considering designers’ knowledge as more valuable than the knowledge of the community they are working with, especially when it is already a marginalized one. Aligning with the epistemic stance of Stengers [41] in refusing the role of being

experts, we embrace slowing down processes and the discomfort of uncertainties of outcomes.

Lastly, we would like to put emphasis on the experimental nature of this activity. Drawing on DiSalvo’s [4] idea of “design experiment”, which approaches design as a democratic inquiry, and acknowledges it as incomplete and limited – rather than a grandiose solution to everything [4] – we believe that “design experiments” are grounded, yet again, in an approach that distances itself from a profession-centric praxis and remains open to embodied, local, and everyday practices. Understanding our practice and role as neither always right nor fully objective, but rather as precarious, led us to concentrate on doing and trying, while continuously questioning our actions and assumptions. Hence, Storylab became a laboratory to explore new ways of designing, which are also democratic. “20 Consigli” resulted in an activity centered on horizontal participation and debate, based on “publicizing” [38], aligned with Mouffe’s [2] model of agonistic pluralism, as discussed earlier, since it did not aim at consensus, but at dissensus and pluralism. Thus, the activity described can be seen as a “design experiment” [4]: a way of exploring design and democracy that finds “value in the action of that undertaking, in the doing of design and democracy” [4, p. 186]. Looking at “20 Consigli”, the final booklet did not turn out to be adopted by new inmates as we expected. Still in our sensing of the activity, we went beyond measuring the “success and the failure of implementing solutions” as “the sole outcome” – as dominant design narratives tend to represent [7, p. 17] – and we acknowledged the more open-ended nature of participatory design and the value of the process itself.

The design and democracy explored in the case of “20 Consigli” sought to support the unfolding of a collective process, one that was tumultuous, political, dialogical, and grounded in the lived realities of those involved. Recognizing our practice as limited helped create a more horizontal space where everyone was regarded as knowledgeable and was important, because “democracy must be the product of social pursuits rather than isolated, individual decisions” [4, p 187], which could otherwise exclude some voices.

5.3 Limitations

The activity, however, presented some limitations, which we empirically observed through a participatory process of evaluation and collective reflections. First and foremost, there was a dependency on us as facilitators. Although we aspired to make the activity, its timing and methods less imposed by us and more responsive to the participants’ input, our role still maintained a certain degree of control over the session and discussions, particularly in regulating rhythms of the activity and summarizing the content that emerged in the written final output.

This implies that there was a lack of full horizontality between inmates and us, even if this is what we aimed for. Yet this was not totally under our control, because it was highly influenced by the San Vittore context. For instance, the high turnover and the uncertainty about the future waiting for a trial create an instability that leads to such dependency on us. This instability also influences the temporality of some observed impacts, as the effects of the activity are often visible for a limited time, since many people have been transferred.

Another aspect that needs to be underlined concerns the evaluation of the activity based on participants' direct feedback, which we cannot consider entirely objective. When asked to comment on the activity, most responses were brief, extremely positive and lacked critical reflection – influenced both by our presence and by their daily need to engage in meaningful activities to avoid remaining confined in their cells. For this reason, our assessment of the activity was based on a combination of elements: the more critical and reflective comments spontaneously shared by the participants, our empirical observation of relationships and interactions among them, and the level of engagement observed during and beyond the activity.

Looking specifically at the activity as it unfolded, we were able to notice some shortcomings in the participation of certain participants, recognizing some of Kraff's [16] hindrances to agonistic participatory design. For instance, we could observe some participants holding back from sharing their thoughts in the group discussion, either because of the setting, the composition of the group, and/or because of participants' predisposition. Some inmates were visibly involved in the debate, but the presence of certain inmates caused others – either shy or intimidated – to prefer not participating. Although our effort to involve them was strong, some remained silent, and their voices could not be fully included in the final output. This reflected the complex dynamics of participation in such a context, reminding us that participation can also take the form of absence, silence, and partial forms of involvement. Yet further steps are still needed to recognize and enable all forms of participation, including those that remain invisible or non-verbal.

6 CONCLUSION

This paper explores how participatory design from “marginality” [42, p.149] can foster democratic spaces where a multitude of contrasting and different voices can coexist and engage in dialogue together in an agonistic way. The community of inmates in San Vittore prison is characterized by a strong presence of antagonism, due to its forced nature [25] under a total institution [1]. Within this context, conflicts and tensions are ever-present. Even when the atmosphere may appear relaxed, inmates cannot remain indifferent to each other or avoid contact with others because of forced proximity, strong hierarchies, and unpredictability of daily life.

The activity of “20 Consigli”, done in the setting of the permanent storytelling workshop of Storylab, presents how design through agonism can move beyond consensus and engage with conflict in a way that is not aimed at completely erasing it, but rather focused on shifting the level at which conflict takes place. The resolution of conflicts cannot happen and, even when achieved, remains temporary, as democracy is an ongoing struggle, marked by the dimension of “the political” [6]. To seek consensus in participatory design means not recognizing the power dynamics at play, leading to the exclusion of certain voices and the reinforcement of hegemonic positions. In attempting to neutralize antagonism, such an approach may promote it even more [6].

By participating, “publicizing” and listening to each other's thoughts, stories, and emotions, participants start to recognize the other as legitimate. They may still disagree, but the person once seen as an enemy starts to regain their humanity in the eyes

of the others. Embracing agonism means embracing the dissensus that comes from the pluralism that is present in every community or democracy. In this activity, the point was not to find a consensus, excluding some participants through deliberation, but to make room for dialogue and debate to embrace all voices, even if conflicting. Coexistence should mean the inclusion and acceptance of everyone, without one silencing another. Through the activity of “20 Consigli”, participatory design based on agonism displays its potential as a means of coexistence, dialogue and transformation of conflict, without solving it. A key element that has been shown to be at the center of this transformation and coexistence is listening. Listening means recognizing the person in front of us. In this way, listening becomes a constituent of social relations and a dimension where conflicts can change. Through the activity, participants created a listening environment using the act of narration as “a shared social practice, through which participants not only made sense of their own trajectories but also constructed a space of co-presence” [25, Conclusions, para. 7].

However, we argue that if design wants to focus on fostering coexistence, dialogue and genuinely support the community it works with, it also needs to question its own practice. For instance, our practices might silence someone, hindering democratic coexistence and dialogues, because we would dismiss the pluralism of that community and the knowledge of those people. In the context of prison, we find it even more important since the community is already at the margins. Thus, we could lead to their further marginalization. Consequently, we promote a practice that puts a situated [3, 8], experimental [4], process-oriented, and decolonizing [40] approach at the center of a fairer practice aimed at helping the marginalized community that designers work with. It is not enough to do social change; design needs to be that social change to then foster it.

Lastly, in times when dissent in Italy is increasingly being criminalized – especially in the case of inmates [21, 42] – it becomes essential to create and protect spaces where dissent and disagreements are not only permitted but valued. For inmates, spaces that foster the ability to engage in open dialogue and to debate diverse perspectives, expressing objections, take on a transformative significance. These become democratic platforms in environments where democracy is otherwise absent: both because society has excluded them from its democratic processes and because prison itself is inherently non-democratic, leaving no space to address conflicts in an agonistic manner. By being democratic spaces based on dissensus and agonism, these platforms – as the one enabled by the “20 Consigli” activity – allow their participants to live together in a way that is not antagonistic.

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