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DESIGN CULTURE(S)

Cumulus Conference Proceedings Roma 2021

Volume #2

Cumulus Conference Proceedings Series

Cumulus the Global Association of Art and Design Education and Research

Rome 2021

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About the conference

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The theme

More than three years ago (it was 2018), when we presented our candidacy to host the Cumulus Conference in Sapienza, our first effort was to set up a Conference Theme. The duty was not simple since we wanted to avoid any naïve, fashionable or captivating topic. We were in search of a theme which is appropriate to the times, the context and moreover, to the Cumulus's community.

Our starting point was to consider what Cumulus meant and still means, not only for us, but within the worldwide design community. Looking back in the history of Cumulus, we found an interesting picture in its name: in fact, "cumulus" is the English name of a specific kind of clouds and comes from a Latin word that means "heap, pile, mass". Therefore, the word Cumulus is refereed, at the same time, to those big clouds that appear in the sky every time in different forms and always in constant change, as well as it is referred to a set of singular elements that make up a unit together. As a consequence, Cumulus efficiently describes the idea of a set of many singularities that meet, settle and become each time a new and different entity.

This picture helped us to set our goal: offering to such variegated, mutant, but nevertheless aggregated "cumulus", a conference theme where to recognize itself. This idea of big entity made of a huge number of singularities is connected to the idea of community, and then we had no doubt that this was the exact purpose of the founders of Cumulus when they decided its name.

Today the concept of community is increasingly complex, since it is crossing new social, technological, political and economic challenges and at the same time it is more global and multicultural than ever, more and more enriched by new hybrid languages and habits, due to the increasing flows of goods and people around the world. As a consequence, also a

Design Community, as Cumulus, is evolving as a wide-open field with many new practices and sometimes new principles.

In this regard, in order to figure out such complexity, we found a suitable answer in another word with Latin roots: the word "culture". Culture comes from the Latin word "colĕre" which means "cultivating the land to make grow" and, figuratively, also "taking care" of something, including knowledge, and therefore, "cultivation through education, improvement and refinement of the mind". This second meaning of "culture" is based on an insightful concept by the ancient Roman orator Cicero in his Tusculanae Disputationes: "cultura animi", which is the cultivation of the soul.

The resulting parallel between the culture of the land and the culture of the soul was fascinating and highly significant to us, since it is showing the challenge of growing something new, starting from the roots, from the soil, from the context and - as we know - depending on available soil, context and roots, we are growing different plants, obtaining different fruits and seeds, to plant again in a virtuous life-cycle. Thanks to this metaphor, we understood that diversity is a prime condition for the birth and the growth of culture, while it doesn't mean opposition but combination, arrangement and hybridization. Thanks to this metaphor, we got back to the initial concept of accumulation, and to the concept of Cumulus.

On another note, the Cambridge English Dictionary states that culture is also "the way of life, the customs and beliefs, of a particular group of people at a particular time". This could be an interesting stimulus but, when associating "Culture" with "Design", it was immediately clear that we cannot refer to one unique Culture, but we need to open to the concept of biodiversity, where Design cannot be considered as the result of a single dominant, globalized, levelling thinking.

Finally, looking into design as an expression of Culture(s) and Culture(s) as the outcome of Design means to take into consideration not only what we are doing now, but what we are inheriting from the past and which should be granted for the benefit of future generations, so intertwining past and future, tangible and intangible, innovation and tradition.

Here is our conference theme: Design Culture(S)

Here, the suffix (S) is not only indicating the plural, the diversities, but it is also connected with the "saxon genitive", which is taking Design as subject, while connecting it to other different objects/meanings.

Following this concept, we found the ten keywords which we used to describe the tracks:

Artificial, Languages, Life, Making, Multiplicity, Proximity, Resilience, Revolution, Thinking and New Normal.

Each keyword was enriched with three additional keywords, to better explain the different directions and connotations, which are:

- Artificial is connected with Digital, Technology, Robotics
- Languages is connected with Aesthetics, Expression, Visual
- Life is connected with Nature, Biology, Human
- Making is connected with Process, Production, Post-Industry
- Multiplicity is connected with Gender, Pluralism, Diversity
- New Normal is connected with Health, Education, Work&Play
- Proximity is connected with Places, People, Economy
- Resilience is connected with Social Innovation, Circular Economy, Sustainability
- Revolution is connected with Critical Thinking, Interruption, Change
- Thinking is connected with Theory, History, Criticism

We obtained 40 wonderful words, full of possible meanings, ready to be interpreted and declined by the worldwide community of cumulus to figure out Design not as a singular specific voice but as a plural ecosystem of meanings.

After three years, during which our world is extremely changed, we can say that these words and this topic seems even more current and significant.

In the next pages of the Conference Proceedings, we are very enthusiast to offer a big picture of the biodiversity of Design Cultures and the multiverse of our Cumulus.

The experience

Cumulus Roma 2021 'Design Culture(S)' covered four days full of parallel sessions, working groups, poster sessions, exhibitions, social events, and more, but above all attending was a new form of experience than a conference.

While feeling the responsibility of filling a long void caused by the pandemic, we tried to redesign the whole experience to deliver a new form of conference which is keeping the inpresence through the online opportunities, so to bring you all to Rome and get the colors, the smell and the taste of the city, the architecture, the arts, the food, and the wine, always giving a cultural and a scientific perspective.

When facing the challenges, we wanted to deliver a new format to the whole Cumulus community, with the aim of innovating with technology, enhancing networking and the sociability of the experience, and keeping everyone on board to ensure the participation and democracy to our association from anywhere in the world, no matter of the time zone.

After four full days, we trust this conference at Sapienza University of Rome to be one of the longest Cumulus initiatives, counting with approximately 680 attendees, more than 350 papers and posters, 10 exhibitions, 10 tracks and 80 parallel sessions, 20 track keynotes and

four plenary keynotes, more than 50 schools exhibiting in the New Members Fair from everywhere in the world, and 18 schools participating in the Italian Members Fair.

Our aim was to develop a new form of hospitality to welcome and to make all of you feel at home in Rome but in a new virtual environment, while sharing design research and knowledge, along with the true spirit of Cumulus.

It is not enough to have a good project to gain good results, but it is necessary to get good responses. Your reaction was extraordinary, not only for the massive amount of registered participants, but for the involvement, the enthusiasm and not lastly the patience you have shown during the days of the conference. You joined in perfect Cumulus style from all over the world: from Oceania to the Americas, from Africa to Europe, to Asia, and you have actively followed the four days continuously, participating in a chat that often could not make your voices heard, but made us feel your presence very close.

Thank you for trusting us since the very beginning to the very end, while making this event possible. We will remember it for a long time for its extraordinary nature. We wish we will meet all together soon again without mask, and we will keep the memory of these days together among the best memories of this difficult period.

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MULTIPLICITY

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NEW NORMAL

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PROXIMITY

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Hélène Day-Fraser, Emily Carr University of Art + Design, Canada Alastair Fuad-Luke, Free University of Bozen-Bolzano, Italy Stefano Maffei, Polytechnic University of Milan, Italy Betti Marenko, Central Saint Martins, University of the Arts London

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Keynote speakers

Roberto Marchesini

Roberto Marchesini is Director of the Center for the Study of Posthumanist Philosophy, as well as the School of Human-Animal Interactions, both based in Bologna, Italy. His studies focus on philosophical ethology, bioethics, zooanthropology, and posthumansism in an effort to better comprehend human-animal interactions. The cornerstone of his philosophical proposal is the unmasking of a perspective error that places humans at the center



and at the measure of his predicates. One of his last books reinterprets the union between human beings and technology as a partnership that emerged from the phylogenetic set of the Sapiens species, highlighting the hybridizing and shaping potential of technology. From this perspective, every invention, every discovery, has an epiphanic effect; that is, it opens up a new dimension of the unexpected and of opportunities that change the boundaries and the perception of what we define human.

Salvatore Iaconesi and Oriana Persico

Salvatore laconesi is a robotic engineer, designer and artist; Oriana Persico is a cyber-ecologist, autobiographer and expert in digital inclusion. Living and working together since 2006 under the brand [AOS – Art is Open Source], they created artworks and performances of global interest united by the exploration and observation of contemporary technological human beings and societies – and their continuous mutation. Promoting a possibilistic



vision of the world in which art is the glue between science, politics, anthropology and economics, they are the founders of Nuovo Abitare and HER, the two research centers they use to study the psychological and social implications of data and computation in human societies. Together they wrote Digital Urban Acupuncture (Springer, 2016), La Cura (Codice Editore, 2016), Read/Write Reality (FakePress Publishing, 2011), Romaeuropa FakeFactory (DeriveApprodi, 2010) e Angel_F: diario di vita di un'intelligenza artificiale (Castelvecchi, 2009).

Pier Luigi Capucci

Pier Luigi Capucci has been concerned since the '80s with the studies on communication, the new media and the new art forms, and with the relationships among arts, sciences and technologies. His theoretical activity is concerned with technologies of representation and communication, with technoscience-based art forms and with the media archaeology studies. He published more



than 350 texts in books, magazines and conference papers in Italy and abroad. Founder of the first online magazine in Italy NetMagazine / MagNet; president of Noema, journal on the relationships between forms of expression, technologies, sciences and society; member of the International Advisory Board in many editions of Ars Electronica. Recently he founded art*science, a three-year research project on art and climate change and he serves as a consultant to the European Commission on the relationships between scientific disciplines and technologies (in particular Artificial Intelligence and Big Data) and humanities.

Chiara Luzzana

Chiara Luzzana is an Award-winning Sound Designer. She pairs a broad range of leadership in Sound Design, Music Composition, Sound Branding, Soundtrack and Audio Installation collaborating with companies and agencies all over the world. Noted among others for her project "The sound of city", she explores and listens in awe to the artifacts of the urban environment, the products of the industrial cultures all around the world. Eclectic Artist, she



wanted to break the rules imposed by notation, working only with noise. Former student at Berklee College, she investigated how the brain reacts to sounds, experimenting with everything from the neurobiology of musical cognition, to the construction of microphones and sound sculptures. Her projects and talks take us to a journey starting from listening to our life, up to listening to ourselves turning life into a "soundtrack".

About Sapienza University of Rome

Faculty of Architecture and School of Industrial Design

The conference took place at Sapienza University of Rome, Faculty of Architecture. Sapienza University of Rome was founded in 1303 by Pope Boniface VIII and it is one of the oldest universities in the world. At the moment, Sapienza is hosting about 115,000 students and 4.000 professors and researchers, and it is a top performer in international university rankings, thanks to the 63 Departments organized in 11 Faculties driving high levels of excellence in several fields.

The Degrees of Design are part of the Faculty of Architecture, which was founded in 1920 and it happens to be the first modern Faculty of Architecture in Italy. At the core of its mission is the commitment to innovation, technology, urban living, while serving a fast changing society.

Its programs and curricula are divided between scientific research, studies in the humanities and experimentation with old and new technology. All this is leading to the education of the modern designer, which can be considered the synthesis of a scientist and a humanist who is both an artist and a technologist at the same time.

After the Degrees in Design, the Faculty is also offering programs in architecture, city planning, landscape, interior architecture and design management. Its high-calibre graduates are equipped with the skills which are necessary to design and to manage sustainable products, systems, services and environments, leading to innovation, technology, visual communication and design.

The Design Degrees in Sapienza are the following:

- A Bachelor Degree in Design;
- An International Master of Science in Product and Service Design (in English);
- A Master in Design and Visual and Multimedia Communication;
- An Interdisciplinary PhD Program in 'Planning, Design, Technology of architecture'.





Performativity as a language of sensemaking for cultural service design in local museums

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Abstract | The local museum in the future will not only be a space to display the local culture and history, but also strive to serve as a shared place connects communities and their memories. As a promising channel for social cohesion, cultural services in museums create value through triggering social dialogue, open participation, as well as fostering relationshipbuilding and leading users' sense-making. To create immersive experiences where visitors are both audience and performer, performance theory was introduced in this research to propose the concept of "performative cultural service". This paper, after a comprehensive review of performance studies, summarizes the performative strategies for sense-making as well as its mechanism of creating impact, to explore the possibility of achieving performativity in cultural service design. After a comparative analysis on the structure of service and performance, this research presents an initial design framework and corresponding design strategies in the context of the local museum.

KEYWORDS | PERFORMATIVE CULTURAL SERVICE, SERVICE DESIGN, LOCAL MUSEUM, SENSE-MAKING, PERFORMATIVITY, CULTURAL SERVICE, SOCIAL COHESION

1. Introduction

Nowadays, museums are shifting from a site of authority to a site of mutuality to respond to challenges posed by postmodernism and post-colonialism, through becoming more democratic and inclusive of contemporary social diversity (Soares et al., 2018; Hooper-Greenhill, 2000). Museums take toward issues of democracy and empowerment through redefining the relationship with their audiences and presenting both side opinions and interpretations (Hooper-Greenhill 2000; Wood 2010). In this context, the local museum is playing a pivotal role in connecting the community around them, not only as a carrier of shared memory, but also as a shared space for the exercise of community power(Ocampo & Lersch 2013).

As the overall social change and, therefore, the imperative in creating new opportunities for community engagement (Wood, 2010), museums social responsibilities are underlined (Sandell, 2003). Museum phenomenon, which must also be understood as a process, phenomenon, flow, or event (Scheiner, 2017), should control the representation of a community and its highest values and truths (Duncan, 1995). Different from the traditional museum, where is never the direct expression of life or reality itself and where the visitor is never in a relationship of direct and unmediated contact with the selected material artifact, Ocampo and Lersch (2013) argued that the community museums imply creativity. Visitors may not accept given solutions, but instead seeks to invent new ways of addressing challenges. Thus, the local museum could serve as a tool for constructing collective subjects to build a joint interpretation of their reality and their history for the generation of awareness.

Cultural services are sense-making activities that allow for open participation, dialogue triggering, and relationship building, which could be a strategic approach in leading and fostering social cohesion and museum inclusion(Shu& Lupo, 2020). The strategic importance that these services, for strengthening the cultural heritage enhancement actions, has long been the focus of the Italian Ministry's attention, according to guidelines issued in 2009 on the activation and assignment of services to the public in Italian cultural institutes (circular + annex of the General Secretariat No. 49 of March 23, 2009). Cultural services, as foreseen by the art. 115 of the Code, can be managed directly or indirectly. The General Direction for the Promotion of Cultural Heritage also provides for the preparation of tender bids to be used by the peripheral Institutes of the Ministry, when a tender procedure must be issued for the management of services to the public in concession to third parties.

Services have been widely associated with theatre and experience economy, that every business is seen as a stage with scripts, front-end service personnel as actors, and service encounter as a performance (Grove& Fisk, 1992). Pine and Gillmore (1999) argue that staged experiences fulfill a larger subset of customer needs, therefore valued higher by customers than manufactured goods or extracted raw materials. Rifkin (Rifkin 2001) further argues that culture itself is being pulled into the commercial sphere in this experience economy. Many

cultural undertakings are dedicated to the creation and reproduction of certain special psychological experiences (Toffler,1970), that in almost all developed high-tech societies, the art-based 'experience industry' is undergoing significant development for mass entertainment, education, etc.

As an interactive and intuitive language, performance could coordinate all the elements systematically, from the physical environment to human senses, from the narrative to emotional resonance, to achieve an optimized and impactive experience. In this paper, performativity is introduced as a sensitive language to design cultural service experiences in museums. After a comprehensive review of performance and its mechanism in sense-making and impact-creating, this research explores the possibility of achieving performativity in cultural service design. This research presents an initial design framework and corresponding design strategies in the local museum's context through analyzing cases. All these results have been tested in a design workshop for the Wuxi Museum at Jiangnan University, 2020.

2. The mechanism of performance in sense-making and impact-creating

Sense-making, as defined by Kolko(2010), is "an action-oriented process that people automatically go through in order to integrate experiences into their understanding of the world around them". It is an active concept, as meaning generates from social interaction and enactive experience that matter to the subject (Jaegher& Paolo,2007) . As Freire(1982) states that, man is a subject because he is a being of relations, capable of reflection, of critical thought, of historical awareness; a being who can choose, create and transform reality; a being cannot renounce without becoming a mere spectator of event, a passive receptor, an object. While performativity could be shared language for participation, presenting and representation, demonstration, and even for prototyping or negotiation.

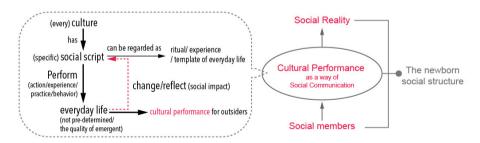


Figure 1. Cultural performance and its function on social communication imply its potential in enhancing public participation during positive social change.

In *The presentation of self in everyday life*, Goffman(1978) metaphorized everyday life behavior into the performance that people present themselves to leave a desired impression on others. Even people follow culturally specified social scripts, according to Bauman(Bauman 1984), performance has a quality of reflexivity in the social-psychological sense, as it can provide a situation that enables one to enter the other's attitude and experience and start to look at itself from other's perspective. By raising the level of consciousness, cultural performance with reflexivity could facilitate social identity achievement in any social context. Furthermore, social reality can be constructed and communicated among social members through social communication (Phillipson, 1972), from which interactive and resilient social structures are born out(Singer, 1955). Therefore, cultural performance and its social functions imply its potential in enhancing public participation during positive social change (Figure 1).

One of the most basic common characteristics among cultural performance is what was called" the shift in the frame of experience" (Bauman, 1984). We could transform ordinary or extraordinary experiences into meaningful signs and messages, through which groups can stage, display, and explain social experiences (Bakhtin 1968). However, as stated by Colebrook (2002), art may well have meanings or messages, but what makes it art is not content but its affect, the sensible force or style through which it produces content. While affect is a sensation produced in an encounter between body and event, and refers to emotional, often automatic, embodied responses that occur in relation to something else – be it object of observation, recall of a memory or practical activity(Thrift, 2007). Connect with visual art, Bennett (2005) argues that affect produces real-time somatic experience outside the frame of representation, but a diversity of encounters, processes and experiences that extend the relationships over time and in different, frequently unusual spaces. Affect, for Kim and Bianco (2007), is connected both to a capacity for action and to a sense of aliveness, where it is that vitality that prompts a person's desire to connect and engage (perhaps with others or ideas). Jaegher and Paolo(2007) defined participatory sensemaking as:

"the coordination of intentional activity in interaction, whereby individual sensemaking processes are affected, and new domains of social sense-making can be generated that were not available to each individual on her own." (Jaegher& Paolo, 2007, p.497)

In this definition, it is indicated that what undermines the sense-making is not the lack of expressiveness, but the ongoing engagement that has been unhinged. So she introduced the concept "coordination", like patterned behaviour such as synchronization, mirroring, anticipation, imitation, to connect temporal aspects of interaction and their consequences for joint and individual sense-making. Meanwhile, in *The Structure and Deconstruction of Drama*, Sun(2016) proposed five types of aesthetic psychology that could improve sensemaking and impact-creating with audiences' participation, that is Internal imitation, empathy, aesthetic distance, users' imagination and creation, Psychological time and space.

While critically viewed through the lens of design, sense-making is a motivated, continuous effort to understand connections, in order to anticipate users' trajectories and act effectively. (Klein et al., 2006). If people behave according to social scripts, we may succeed in codifying the environment(Van Doorn, 2007) or services to support visitors in carrying out these scripts and performing their daily life, or to lead them to a more extraordinary performative experience.

3. Performativity in cultural service

Performativity is a language which functions as a form of social action and has the effect of change(Cavanaugh 2015). The concept was first defined by philosopher of language John L. Austin(1975) as the capacity of speech and communication to act or to consummate an action.

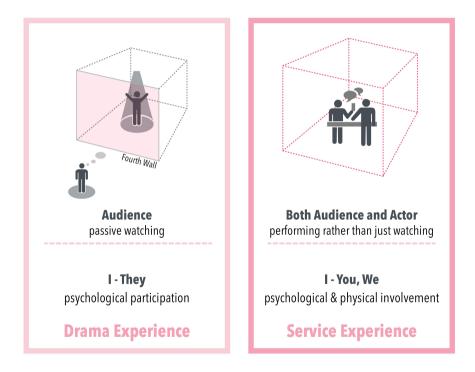


Figure 2. The theatre and the service represent two different modes of space and dynamics in the experience industry.

Performativity works through cultivating or guide the subject's sensitive richness, which includes not only the five senses like eyes, but also the so-called spiritual senses, practical senses and the senses of humanity (Sun 2016). If regard cultural services in museum as sense-making activities, performativity is to magnify the sensitivity of visitors to understand through interactive narratives, or to make visitors a witness to the historical process, or to encounter themselves through being one part of the story.

Service and performance are closely linked, and services themselves have been widely described as "performances". The metaphor that behavior is drama(Grove& Fisk, 1992) engenders a framework for describing, understanding, and communicating about services experiences(e.g. rehearsal, scripts and routines, backstage, costuming, etc.) However, the theater and the service represent two different spatial and dynamic modes in the experience industry (Figure 2). The theater space is divided strictly into two parts, that actors perform on the stage while audiences sit quietly in the auditorium. While, many services' environment is more inclusive, where service providers and users could interact with each other. The difference between theater and service is whether there is a "fourth wall" (Sun 2006), an invisible wall of a set through which the audience sees the play's action. Thus, besides the psychological participation in drama, users in a service could also conduct physical involvement in a realistic environment by reacting, responding, and co-creating to change or influence the experience.



Figure 3. Dialogue in the Dark provides immersive experiences where visitors are guided by blind guides in absolute darkness.

For example, Dialogue in the Dark (Figure 3) is one of the world's most exciting life-changing experiences, where blind guides guide visitors in absolute darkness. Visitors are pushed out of their comfort zone into a world without pictures to experience daily life environments like enjoying a walk in the park, taking a boat cruise, or visiting a café in specially designed darkened rooms. A role reversal is created in these experiences whereby the sighted becomes blind, and the blind gain sight. Thus, Dialogue in the Dark could provoke empathy and advance social inclusion to the blind.

As a language for communication, exploration, and prototyping, performativity could also enhance collective sensitivity by valuing each participant's creativity and imagination. For example, 100 in 1 day is a creative activity initiated in major cities worldwide, encouraging people to spend 100 days thinking about the social problems around them, and perform their solutions together on the same day, to trigger social dialogue. Figure 4 shows the practices in Hongkong, 2016. A residents' innovative actions against the prohibition of bicycles on roads have triggered the public's reflection on the question of "who should be the user of roads."



Figure 4. A residents' innovative actions against the prohibition of bicycles on roads in Hongkong, 2016 have triggered the public's reflection on the question of "who should be the user of roads."

In a series of exhibitions Sensitive Environment designed by Studio Azzurro, different languages and digital narratives are integrated to involve the viewer in a story of images and sensations. Stories will be activated and "live" again when visitors get in touch with the characters on the screen, making himself the bearer of that story and its message. In this case, the viewers' interaction is an indispensable component for this artwork, and the viewer will activate his or her own as an echo through the encounter. Visitors' interactions are combined with digital content to achieve multiple narratives, associations, and meanings.

4. Design strategies for performative cultural service for local museum

Performative cultural service doesn't change social reality directly but isolates a space (situated context) for visitors to encounter, involve, explore, negotiate, collaborate, or even try an alternative(engaging in a process). After that, visitors back to the reality may gain a new perspective or inspirations to reflect society reality (echo) and be proactive for potential social change. The performative experience is co-created, where designers create a context to support visitors' own sense-making and provide different storylines or possibilities for visitors to explore, while visitors interact with narrative to create their personal experience and story. Therefore, we could divide performative cultural service experience into three stages: Context, Process and Echo (Figure 5).

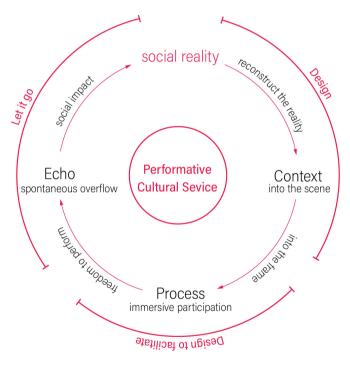


Figure 5. Performative cultural service experience could be divided into three stages: Context, Process and Echo.

According to the case study and literature review, this paper proposed a theoretical framework for enhancing the performativity of cultural service (Figure 6). After analysis relevant cases with these three stages, more detailed factors and potential strategies for

design intervention are identified in each stage. After that, the framework and strategies have been reframed into a set of toolkit for relevant design practices, which has been tested in a two-day design workshop for the Wuxi Museum in 2020 at Jiangnan University, China.

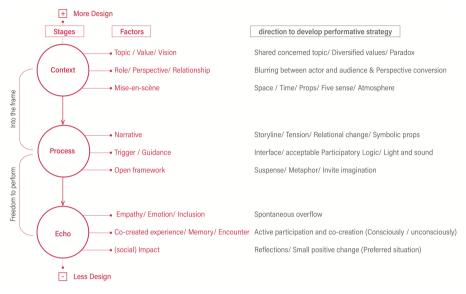


Figure 6. An initial meta-design framework indicating different stages and factors of performative cultural service experience.

- Context: Context serves as the base of the performative interpretation, including topic, role and perspective presetting, and Mise-en-scène. Local museums could select shared concerned issues as the topic and reconstruct them into situated context. In the stage Context, visitors' role and perspective will also be preset, which could be the basis of narratives. With the same scene but with different roles or perspectives highlighted, a drama would achieve different effects, focuses, and interpretations. For example, visitors consciously take the role of the blind before the experience of Dialogue in the Dark to obtain others' perspectives. That is a perspective conversion technique "from the third to the first perspective." Meanwhile, Mise-en-scène like settings, time and space, and atmosphere could lead users into the scene and prepare for an immersive experience. In this stage, the designer is a context-provider who creates a context that supports story-making. A situated context is essential for leaving a memorable experience in the minds of those who visit it.
- Process: The storyline slowly unfolds in the second stage, leading visitors to reveal the immersive narrative with guidance and triggers gradually. Technology could empower the visitors in narrative, activate the visitors as one part of the

history or a witness of a process, lead or provoke visitor's exploratory behavior in revealing the storyline with hints and instructions, as well as personalize the story with user's interaction. In this stage, the design focus is to reconcile "narrative" and "interactive", that is, the contradiction between the linearity of reconciling narrative and the nonlinearity of participants. Narrative is the product of top-down planning by designers, and interactivity requires users' input and contribution from the bottom up. To achieve well-designed interactive narratives, a balance is required between the freedom to interact when we perform and the structure that is imposed on us by our environment to create natural and memorable experiences. Thus, an open framework is indispensable for inviting visitors' own interpretation and imagination. As sense is co-produced by designers and visitors in this stage, designers could never control the whole process, but facilitate visitors' participation and optimize the balance through iteration.

• Echo: Echo refers to visitors' internal participation before fully detached from the experience, as well as their following active behaviors that respond these experience. The first two layers can be designed in advance, while the relation, reflection, emotion or other impact in stage layer is improvise, which cannot be designed but facilitated. As a successful performance is co-created by designer and visitor, the emotion and the "performance" of audience is spontaneous overflow, that designers cannot design or control, but facilitate the process and let it go.

5. Conclusion

This interdisciplinary research explores the complexity of service design by investigating performativity as a language of service encounter and addressing social issues like social cohesion in the context of local museums. Through interpreting cultural service experience as a sense-making activity, this paper is committed to breaking pre-established methods for service design like user journey and touchpoints and proposing a theoretical framework for designing performative cultural service and the directions to develop relevant design strategies. All these results have been tested during a design workshop in Jiangnan University, Wuxi, China. This paper presents a reflection of the role and the future of local museums in the digital age.

References

Austin, J. L. (1975). How to do things with words. Oxford, UK: Oxford University Press.
Bauman, R. (1984). Verbal art as performance. Long Grove, US: Waveland Press.
Bakhtin, M. (1968). Rabelais and his world (H. Iswolsky, Trans.) Cambridge.

- Bennett, J. (2005). Empathic vision: Affect, trauma, and contemporary art. Stanford University Press.
- Cavanaugh, J. R. (2015). Performativity. Oxford University Press.

Colebrook, C. (2001). Gilles deleuze. Routledge.

- De Jaegher, H., & Di Paolo, E. (2007). Participatory sense-making. *Phenomenology and the cognitive sciences*, 6(4), 485-507.
- Duncan, C. (2005). The art museum as ritual. Heritage, museums and galleries: an introductory reader. Psychology Press.
- Freire, P.(1975). La educación como práctica de la libertad, México, Siglo XXI

Editores, pp. 28-45.

Goffman, E. (1978). The presentation of self in everyday life. London: Harmondsworth.

- Grove, S. J., & Fisk, R. P. (1992, October). The service experience as theater. Retrieved October 8, 1992, from http://www.acrwebsite.org/search/view-conferenceproceedings.aspx?ld=7341
- Hooper-Greenhill, Eilean (2000). *Museums and the Interpretation of Visual Culture*. London and New York: Routledge.
- Kim, H., & Bianco, J. (2007). The affective turn: Theorizing the social. Duke University Press.
- Klein, G., Moon, B., & Hoffman, R. (2006). Making Sense of Sensemaking 1: Alternative Perspectives. Intelligent Systems, 21(4), 71. DOI: 10.1109/MIS.2006.75

Kolko, J. (2010). Sensemaking and framing: A theoretical reflection on perspective in design synthesis. Retrieved July 8, 2010, from http://www.drs2010.umontreal.ca/data/PDF/067.pdf

- Murray, J. H. (2017). *Hamlet on the holodeck: The future of narrative in cyberspace*. Cambridge, US: MIT press.
- Ocampo, C. C., & Lersch, T. M. (2013). The community museum; a space for the exercise of communal power. *To Think Sociomuseologically*, 119-34.
- Phillipson, M. (1972). Phenomenological philosophy and sociology. *New directions in sociological inquiry*, 119-164.
- Pine, B. J., Pine, J., & Gilmore, J. H. (1999). *The experience economy: work is theatre & every business a stage*. Harvard Business Press.
- Rifkin, J. (2001). The Age of Access: The New Culture of Hypercapitalism: The New Culture of Hypercapitalism, Where All of Life Is a Paid-for Experience. Penguin.
- Sandell, R. (Ed.). (2003). *Museums, society, inequality*. Routledge.

Shu, H., & Lupo, E. (2020). Design performativity in cultural service for creating social impact. Retrieved December 10, 2020, from https://servdes2020.s3.amazonaws.com/uploads/event/paper/69/118 Hongming Lupo

_SP.pdf Singer, M. (1955). The cultural pattern of Indian civilization: A preliminary report of a methodological field study. *The Journal of Asian Studies*, 15(1), 23-36.

- Soares, B.B., Brown, K., & Nazor, O. (2018). *Defining Museums of the 21st Century: Plural Experiences*. ICOM / ICOFOM.
- Sun, H. (2006). 戲劇的結構與解構 [The structure and deconstruction of drama: Narrative Structure and Theater Structure (Vol. 5)]. Taiwan: Shulin Publishing Co. Ltd.
- Thrift, N. (2008). Non-representational theory: Space, politics, affect. Routledge.

Toffler, A. (1970). Future shock. Bantam.

- Van Doorn, M., van Loenen, E., & de Vries, A. (2007). Performing in ambient narratives: supporting everyday life performances with technology. *The Drama Review*, 51(4), 68-79.
- Wood, E. (2010). Rules for the (R)evolution of Museums. *In New Thinking: Rules for the* (*R*)evolution of Museums , 54-69.

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