creative
assemblages

cross media arts

for social
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Expanding the field of social arts and design

EDITORS
António Gorgel Pinto
Paula Reaes Pinto
Sérgio Vicente

Cross Media Arts represents an expanded field in which artistic disciplines extend beyond their traditional boundaries to engage with other areas of knowledge, as well as alternative forms of representation and societal intervention. This phenomenon is particularly evident in diverse forms of collaboration between creatives, makers, stakeholders and communities, aimed at taking action towards socio-ecological renewal and cultural cohesion, both of which are increasingly urgent in today's context.

According to these principles, the opening four chapters of the Cross Media Arts 2025 edition, written by invited authors, present a constellation of artistic processes committed to social, ecological and epistemic transformation. In direct dialogue with the leitmotif of *creative assemblages for social impact*, this art-making transcends disciplinary boundaries, cultivating a multiplicity of perspectives, shared principles and collaborative processes within a web of relations and interactions, shaped by human and non-human variables, with the potential to generate new actions and realities.

Hans Kalliwoda presents the *BeeTotems for RefuBees* project, where public art, activism and ecology converge into living sculptures that assemble pollinators and human communities, proposing cities as significant spaces for biodiversity.

Mimi Hapig and Michael Wittmann share the experience of Habibi. Works, an intercultural collaborative workspace in Greece that works with refugee and local populations, creating spaces of dignity and creative inclusion.

Ivan Txaparro, founder of Resonar Lab, presents a nomadic and decolonial practice that integrates music, art and participatory design in itinerant actions for ecosocial justice and community empowerment between Madrid and Berlin.

These projects are introduced by a reflection from Alastair Fuad-Luke, whose extensive experience in activist and collaborative design proposes the notion of *affective encounters* as a driver of societal transformation. This approach reverberates the dominant theme running through the presented projects, which prioritise the consolidation of relational well-being between *actors* and *actants*, through transdisciplinary and situated practices deeply rooted in community contexts. Grounded in principles of

ecological and epistemic justice, these initiatives assert artistic creation as an act of resistance, care and transformative imagination.

These relational art initiatives are followed by a remarkable collection of selected projects, practices and research that cross the boundaries of art, design, technology, education and social action. This part of the current Cross Media Arts edition is organised into four sections, offering a broad panorama of innovative proposals that demonstrate how interdisciplinarity or transdisciplinarity, alongside transmedia expression, can serve as forms of resistance, care, transformation and belonging. Common principles and recurring notions are emphasised, including active participation, more-than-human agency, critical resistance, materiality as a mediator of social and environmental concerns, decolonial practices, enabling situated technologies, and interdisciplinary or transdisciplinary methodologies. These dynamics traverse and connect the projects, giving form to an assemblage of creative practices oriented towards social impact.

The first section, dedicated to *education, inclusion and creative empowerment*, explores transformative pedagogical practices embedded in participatory and inclusive methodologies, bringing together intergenerational projects, artistic actions in vulnerable contexts and proposals that encourage sustainability through creation, experimentation and dialogue. Case studies include experiences in schools, prisons and urban neighbourhoods using photography, performance, natural ink printing or modular typography as tools to inspire active citizenship and the construction of shared identities. This session shows how art can act as a vehicle for listening, mediation and collective learning, reinforcing the right to cultural and educational participation.

The second section, themed around *sustainability, agency and material care*, gathers practices rooted in artistic and craft-based creation that challenge productivist and ecological paradigms, promoting forms of cohabitation with the more-than-human world. The featured projects recover ancestral and local knowledge as a means to rethink how we inhabit and regenerate the planet. With a strong ecofeminist and climate justice component, these proposals bring together agroecology, biodesign, craftivism and collaborative practices as tools of resistance against dominant extractivist logics. These are practices related to specific places and the rhythms of other species, questioning anthropocentrism and proposing alter-relational ecologies based on care and interdependence.

The third section, focused on *participation, place and creative intervention*, features site-specific proposals and collaborative methodologies to transform public and social space through participatory art. Community-based sculptures, performances, actions involving found

objects and shared gardens are some of the creative practices presented, where collective processes take precedence over final outcomes. These contributions reveal the vocation of art as a tool for dialogue, citizenship and intersubjectivity in territories marked by inequality, abandonment or gentrification. This section shows how public and relational art can become a field of collective reinvention of ways of living together.

Finally, the fourth section explores the intersection between *technology, inclusion and situated innovation*, bringing together projects that combine digital art, speculative design and participatory practices with critical attention to context, the body and the ethics of relation. Immersive technologies, provocative artefacts, augmented reality and interaction design are here mobilised not as spectacle, but as tools for listening, empathy and social engagement. These projects question the boundaries between the physical and the digital, the human and the technological, stimulating participants to co-create more inclusive, accessible and relational futures. This section highlights the potential of situated technology to generate meaningful encounters and social transformation.

Across its four sections, Cross Media Arts 2025 affirms itself as a space where the arts and design do not merely narrate resistance and utopia, but embody concrete ways of doing, caring and imagining together a common ground. In a time of ecological, social and political upheaval, this edition of the Cross Media Arts series brings together creative projects that act as catalysts for co-creation and renewal. The projects brought together in this volume, anchored in cross-disciplinarity and strong community engagement, not only invoke multiple knowledges, experiences and territories, but also propose new ways of thinking and doing, expanding the field of social art and design as a space for listening, belonging and emancipation.

Daring to think what has not yet been thought

Paulo Simões Rodrigues
CHAIA, University of Évora, Portugal

The volume introduced by this institutional foreword brings together and documents the more than 30 contributions that comprised, in June 2025 at the Faculty of Fine Arts of the University of Lisbon, the 3rd edition of the international conference Cross Media Arts. Dedicated to critical reflection and debate on the possibilities of connection between different artistic fields and social issues, Cross Media Arts is also the result of a collaborative effort between four institutions: CHAIA at the University of Évora, CIEBA at the Faculty of Fine Arts of the University of Lisbon, UNIDCOM/IADE at the European University, and the National Museum of Contemporary Art.

The success of this initiative (this being the third published volume arising from it) reflects the growing importance of the potential contributions of the arts in addressing the increasingly complex challenges of our time. The diversity of skills and languages that the arts encompass has expanded the horizons of action within a field of knowledge that, until recently, was largely confined to artistic training, and has granted it an intervention capacity within communities that was until very recently either unknown or deliberately overlooked.

The recent intensification of social, political and environmental issues has made the contribution of artistic knowledge all the more urgent — particularly due to its creative capacity to imagine alternative, sustainable and feasible approaches and solutions, and to dare to think what has not yet been thought. This capacity is clearly evident in the very first three contributions to the conference, which, as a group, address three of today's most pressing crises: refugees, migration, and environmental collapse. It is a capacity and a resulting action that is both multi- and interdisciplinary — a quality that gained particular prominence in this 3rd edition, which focused on assemblage thinking, that is, on the interactions between diverse elements and their creative potential.

This has been one of CHAIA's objectives in recent years: to promote the relevance of the arts as a form of knowledge and, in this context, to foster artistic research in its various dimensions, with the collaborative, social and community-based approaches gaining particular relevance — as demonstrated by the success of Cross Media Arts.

creative assemblages for social impact

Alastair Fuad-Luke

Hans Kalliwoda

Mimi Hapig &
Michael Wittmann

Ivan Txaparro

Affective encounters
Discursive actions towards an expanded eco-sociality

Alastair Fuad-Luke

An affective opening

Life in all its complexity is affects on bodies and bodies' abilities to affect other bodies – where bodies are considered at different scales, compositions and states, as well as being corporeal beings and things. Here I paraphrase the 17th century philosopher Baruch (Bendict de) Spinoza who could be defined as both a radical and a radicant[1] (Bourriaud, 2009) – he was offspring of Jewish Portuguese exiles but placed a deep root in New Amsterdam, until he was expelled from the city by the existent regime (religious, political and societal). Despite this ostracization, he generated rhizomatous roots across Europe and the wider world with his writings, especially through his book *Ethics* (Spinoza, 1996/1677). His philosophical position continues to be relevant to contemporary times because "affect" as he defined it is omnipresent in our human and beyond human condition. Writing in Latin he defined affectus as an ability to affect and be affected, whereas affectio[2] is an encounter between the affected body and a (second) affecting body. Spinoza's philosophy has been defined as monism because he saw the world as one substance populated by affecting and affected bodies, but his conceptions would equality fit historical and emergent views of the pluralities of our human/beyond-human conditions in the Pluriverse[3] and our experiences of diverse cosmologies.

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1 Nicolas Bourriaud considered the radical as someone whose "development is anchored in a particular soil" where primary and secondary roots form, whereas the radicant – such as "the immigrant, exile, tourist or urban wanderer" – develops roots in the host soil. I argue here that Spinoza being born in Amsterdam was anchored in Dutch culture but also had the capacity as a radicant through his Portuguese origins and his subsequent displacement from Amsterdam. See Bourriaud, Nicolas. *The Radicant*. New York: Lucas and Sternberg, 2009, 55-56.

2 As I typed this word "affectio" the Microsoft Word autocorrection changed it to "affection". We see an invisible assemblage of what Félix Guattari in 1989 called Integrated World Capitalism (IWC) – today we might be more familiar with the terminology of "platform" or "surveillance" capitalism but it is still IWC.

3 The Pluriverse means "many worlds" and has been invoked in recent years by various strands of the critical humanities as a strategic, and often decolonial, response to historical and continuing hegemony and violence of Europe's philosophical and theological Universalism.

Bodies, as elucidated above, meet in encounters, which are often defined as unexpected or adversarial meetings. However, in the context of design- or art-based practices that generate assemblages[4] - which we shall simply call gatherings and coming-together of people with other living or non-living beings and things – while the unexpected or the adversarial can happen, there is an overall purpose that suggests that certain events will have positive outcomes (at least, for the humans) even if the affects on all the actant-members (bodies) of the assemblage may not give joy and pleasure but deliver sorrow and pain (Spinoza again).

What is certain is that the intention of the designers, artists, musicians and other creative practitioners presenting their respective projects, as described in the chapters below, was to generate positive social impact even if the affects on all the bodies present or contextually relevant are more difficult to determine. RefuBees in the City by Hans Kalliwoda provides an opportunity for bees – there are over 360 species in the Netherlands – to meet new plants and people and vice versa. Habibi.Works enables locals to meet other (diverse) humans arriving in Europe, meeting them in common spaces where "alternative, silenced and non-dominant knowledge practices" can be shared. Resonar Lab's nomadic tour between Madrid to Berlin gave rise to transdisciplinary encounters through "decolonial applied ethnomusicology", performance and workshops which involved crossing physical, geographic and affective boundaries. While these gatherings/comings-together brought different people, beings and things into their temporary assemblages, there are some common features that traverse these practices that I would like to highlight.

Expanded concepts of social(ity)

All the projects aim for improved relational well-being between the actors and actants – where both are deemed capable of an action (after Latour's Actor Network Theory) - or what I call actant-members of each assemblage. Resonar Lab specifically adopt Bourriaud's concept of "a relational art" (Bourriaud, 2002/1998) as "a methodology of nurturing the conditions in which resonance can emerge"; Habibi.Works opens common spaces to counteract inequalities and racist structures; and, RefuBees introduce the bees to socialising with humans. Re-centering sociality to

4 In common usage "assemblage" means a collection of people, things; a gathering. Here I use the term "assemblage" to refer to Spinozian bodies, human and beyond-human moving beyond the more anthropocentric orientated assemblage as described by Gilles Deleuze and Félix Guattari in their seminal work *A Thousand Plateaus. Capitalism and Schizophrenia* where they refer to *machinic assemblages*, regimes of signs organised in strata, segments and territories, and the *collective assemblages of enunciation* of where indirect discourse (semiotic subjugation) battles with direct discourse (ongoing agonistic debate) to de-territorialise and re-territorialise. I prefer to think of these assemblages of being comprised of polyvalent actant-members which gives each assemblage an emergent, dynamic and unpredictable set of properties.

embrace human and beyond human entities is at the core of my notion of relational design (Fuad-Luke, 2014). Today, I would say that living in an age of critical mass extinction – think of Justin McBrien's notion of the Necrocene (McBrien, 2016) – we have to embrace philanthropia, which originally meant love of the Anthropos, love of human beings, as part of biophilia, love of all the living (Greek, zoe). As Donna Haraway reminds us, living things are not autopoietic but are always sympoietic, making worlds together (Haraway, 2016). So, when we consider social impact, I believe that we have to embrace eco-social or bio-social impact.

All knowledge is polydisciplinary

As Habibi.Works observe in their common spaces and through their Storytellers' Lab learning and un-learning is concurrent, that is, our knowledge base – personal, cultural and political – resides on unquestioned assumptions, frames and habits but it can be opened by encounters with other forms of knowledge. Resonar Lab noted transdisiplinarity in dialogue and diversity present throughout their nomadic encounters. Although the bees are the silent contributors there is no doubt that their knowledge was on display at each of the Bee Totems erected in public space in Amsterdam as part of the RefuBees project. What emerges is that different knowledge practices are mixed, blended and joined in each gathering. While Bourriaud (2002/1998) opened the door wider[5] for artists over two decades ago to adopt more participatory and polydisciplinary practices through a relational art, the shift for designers is still a work-in-progress despite over sixty years of participatory design and co-design and the legacy of the radical design and anti-design movements in Italy in the late 1960s/early 1970s. Taking inspiration from relational art, but embracing an expanded eco-sociality, relational design (Fuad-Luke, 2014) opens a polydisciplinary door. In the last decade there has also been a shift from design being discipline-based to issue- or project-based, what Bremner and Rodgers (2013) called an "undisciplinary" approach. In our hyper-networked, globalised, mobilised and extracted world we will not deal with complexity without adopting polydisciplinary modes of being, sharing, creating and learning together. Ours is, indeed, a relational socio-ecology.

Co-be(com)ing through affective assemblages

The gatherings referenced through the projects of RefuBees, Habibi.Works and Resonar Lab offer opportunities for what Deleuze and Guattari called

5 Participatory or community art projects and "happenings" (after Allan Kaprow) were a feature of artistic practice from the late 1950s to the 1960s and onwards, so the door was already open and well used at the turn of the millennium.

"lines of flight", movements that deterritorialise or destratify our stratified, segmented, territorialised assemblages (Deleuze & Guattari, 2023/1987) such as nation states, universal humanism and human exceptionalism, capitalist segments (platforms, military complexes, surveillance organisations, banks, classes…), cultural norms and so on. In this sense these gatherings gently challenge what Brian Massumi called "ontopower " – an operative logic of power that infiltrates every available space (Massumi, 2015). This allows us to explore other ontologies beyond dominant and hegemonic systems. In enabling direct discourse, in presence, face-to-face, these gatherings open up gaps for unexpected encounters where we experience new affects or affect others (human and beyond human) differently. As we do this together, it is already "co-", communal so our being(s) can become different. These affective assemblages enable openings for different co-be(com)ings at the micro-level in societies. Deleuze and Guattari, invoking Spinoza, note that affects are becomings (Deleuze & Guattari, 2023/1987, p. 299). They would call these combined affects, at the micro-level, "molecular" lines in a rhizomatous structure with their own potentiality to create new multiplicities that nonetheless remain fuzzy rather than ordered relations. Yet, it is at the macro-level, that the "molar" segmented lines in the rhizomes (again, Deleuze & Guattari) hold the ontopower controlling the hegemonic machinic assemblages, the segments, the strata and territories. So, a final question hangs for all arts- and design-based practitioners – how does the molecular coalesce into something, a multiplicity or multiplicities, that can challenge ontopower?

Postscript

Against machinic assemblages of control and extraction

Since Deleuze and Guattari's conceptualisations of the assemblage are central to the projects and propositions herein, it is fitting that we take note of the cautionary tales interwoven in their seminal work, *A Thousand Plateaus* (Deleuze and Guattari, 2023/1987). Lines of flight are full of liminal and real creative potential but there is always a risk that they disturb only to re-segment, re-stratify and re-territorialise in ways which can lead to "a line of death, a line of destruction and pure and simple fascism" (Deleuze and Guattari, 2023/1987, p. 589). In our globalised economy, real (onto)power sits with specific nation states and transnational companies, including the extractive digital platforms that have already unleashed their so-called Artificial Intelligence into the lives of billions of people. These machinic assemblages of control and extraction (Jolar 2020, Crawford, 2021) already have planetary impact on human and beyond human lives whose affects are amplified in real time and whose latent potential for authoritarian or totalitarian regimes is clear. In these conditions, Hannah Arendt asks us to

remember that the world is made, and hence enacted, between us (Arendt, 1993/1955). Here is an affirmative signal that we should come together. Today, of course, we have many ways of "being together". However, being together physically, where our bodies mediate the interface, remains a powerful way of co-be(com)ing. Projects where people come together locally, with "new locals"[6], with beyond human beings (Fuad-Luke, 2021) are the places we must connect to affect ourselves and others.

REFERENCES

Arendt, H. (1993). On humanity in dark times: Thoughts about Lessing (C. & R. Winston, Trans.). In H. Arendt, *Men in dark times* (pp. 3–31). Harcourt Brace. (Original work published 1955)

Bourriaud, N. (2002). *Relational aesthetics* (S. Pleasance & F. Woods, Trans.). Les Presses du Réel. (Original work published 1998, p. 14)

Bourriaud, N. (2009). *The radicant* (pp. 55–56). Lukas & Sternberg.

Bremner, C., & Rodgers, P. (2013). Design without discipline. *Design Issues*, 29(3), 4–13. https://doi.org/10.1162/DESI_a_00217

Crawford, K. (2021). *Atlas of AI: Power, politics and the planetary costs of artificial intelligence*. Yale University Press.

Deleuze, G., & Guattari, F. (2023). *A thousand plateaus: Capitalism and schizophrenia*. Bloomsbury Academic. (Original work published 1987)

Fuad-Luke, A. (2014). Design(-ing) for radical relationality: 'Relational design' for confronting dangerous, concurrent, contingent realities. In M. Jin & Y. Lou (Eds.), *Emerging practices in design: Professions, values and approaches* (pp. 42–73). Tongji University Press.

Fuad-Luke, A. (2021). *Alter-Natura: Design enquanto devir comum [co-be(com)ing]*. Museu da Cidade, Câmara Municipal do Porto.

Haraway, D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.

Joler, V. (2020). *New extractivism*. https://www.extractivism.work

McBrien, J. (2016). Accumulating extinction: Planetary catastrophism in the necrocene. In J. Moore (Ed.), *Anthropocene or capitalocene? Nature, history and the crisis of capitalism* (pp. 116–137). PM Press.

Massumi, B. (2015). *Ontopower: Wars, powers and the state of perception* (p. 5). Duke University Press.

Spinoza, B. de. (1996). *Ethics* (E. Curley, Trans. & Ed.; with an introduction by S. Hampshire). Penguin Books. (Original work published 1677)

6 This was the term I used in a project in Bozen-Bolzano in Nov-Dec 2016 called *Make Yourself* where we created an open access sewing workshop with pop-up shop selling clothes made in-situ to raise money for people who had recently arrived in the city (the new locals) many of whom were in vulnerable situations. See a fuller description of the project here, Hirscher, A. L., Mazzarella, F., & Fuad-Luke, A. (2019). *Socializing Value Creation Through Practices of Making Clothing Differently: A Case Study of a Makershop With Diverse Locals*. Fashion Practice, 11(1), 53–80. https://doi.org/10.1080/17569370.2019.1565377

A synergy between art and science with interventions in public space

Interbeings: a performative ecology for posthuman cities

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ABSTRACT

This paper explores the action-research initiative RefuBees in the City and how interdisciplinary collaborations between art and science can address ecological challenges, specifically the protection of wild pollinators in urban environments. Using the RefuBees project as a case study, the research demonstrates how artistic interventions in public spaces can both raise awareness and create tangible environmental impact. At the heart of the project are BeeTotems: sculptural, living installations that symbolize the connection between humans and nature. These totems, placed across various urban landscapes, act as social sculptures, resources for pollinators and platforms for community education, participation, and ecological data collection. The term RefuBee combines "refuge" and "bee," metaphorically referencing displaced wild bees whose migration into urban areas mirrors human displacement due to environmental degradation. The project thus articulates a broader ethos of interdependence and stewardship. Through its integration of ecological science and artistic practice, RefuBees invites reflection on long-term ecological thinking and urban transformation. It highlights the urgent need to align biodiversity protection with public engagement and civic design. By framing cities as temporary sanctuaries for biodiversity, the project proposes a new paradigm for cross-disciplinary collaboration and systemic change.

KEYWORDS

Wild bees, intervention art, urban ecology, interdisciplinary action research, social sculpture

Figure 1 (opposite page) – *BeeTotems for RefuBees: Press photo with flowers in Corona times* (Ernst van Deursen), 2020.

Introduction

In an age marked by the intertwined crises of ecological collapse and social fragmentation—from mass species extinction to the widening disconnect between urban populations and the natural world, traditional conservation alone is no longer enough. What is needed are imaginative, integrative approaches that not only restore biodiversity but also reshape cultural narratives and human behavior. At this critical juncture, the convergence of art and science offers fertile ground for new modes of ecological engagement.

This paper introduces RefuBees, an ongoing action-research project founded by artist Hans Kalliwoda, which exemplifies the potential of interdisciplinary collaboration to inspire both ecological awareness and collective action. The name RefuBees is a compound of refuge and bee – evoking the plight of wild bees, driven from their native habitats by agro-industrial practices and monocultures, now seeking survival in urban spaces. Just as human refugees flee uninhabitable zones, these pollinators have become environmental exiles, forced to the margins, yet vital to the ecosystems that sustain us.

Through site-specific public interventions, RefuBees transforms city streets, public squares, and private gardens into pollinator-friendly oases. At the heart of the project are BeeTotem installations, sculptural, living structures that merge symbolic art, ecological infrastructure, and community interaction. These works challenge the artificial divide between nature and culture, turning passive urban space into a dynamic sanctuary.

But wild bees are not one-size-fits-all. With over 360 species in the Netherlands alone (Naturalis), each with specific needs in terms of food and nesting substrate, biodiversity protection requires more than planting a few lavender bushes. This is where ecological nuance meets artistic precision. RefuBees embraces the Dutch concept of "spreidingswet", the law of refugees/species distribution, as both a scientific framework and a moral compass. It's a quiet rebellion against lazy generalizations: if we can distinguish a latte from a flat white, surely, we can tell the difference between a mason bee and a mining bee?

Like human refugees, these bees deserve more than emergency shelter, they deserve to be welcomed with respect and dignity, their distinctiveness honoured, and their rights to thrive acknowledged. RefuBees doesn't just build habitats; it cultivates empathy, framing biodiversity as a matter of cultural, not just biological, richness.

Despite widespread campaigns and policy efforts, progress on reversing pollinator decline remains slow. Even if pesticide use were curtailed tomorrow, it would take decades for ecosystems to recover. In the face of this urgency, RefuBees offers immediate, creative, and participatory interventions that meet pollinators' needs while sparking cultural transformation.

By integrating scientific insight with artistic imagination, RefuBees responds to ecological complexity with equal parts rigor and joy. It not only fosters biodiversity but invites citizens to help shape cities as living, breathing ecosystems. This condition may be temporary, a fragile window of refuge in a still-hostile environment, but it should act as a trigger: a grassroots ignition point for a chain reaction of awareness, activism, and ultimately, paradigm shifts in policy, particularly in rural and agro-industrial domains, where systemic change is most urgently needed.

The BeeTotems serve as more than symbolic waypoints. They are functional, inclusive platforms, spaces where people of all ages, ethnic identities, religious beliefs, and sexual orientations can gather, learn, create, and act together. As participatory tools, they model a world in which ecological care and social cohesion go hand in hand. RefuBees, at its core, is not just about saving bees; it's about designing a society that thrives on mutual respect, across species, across cultures, and across disciplines.

> If we don't create the future we want, we get the future we don't want[1].
>
> (Joseph Beuys, n.d.)

The problem of bee decline

While discussions of species extinction and biodiversity loss often dominate contemporary discourse (Hallmann et al., 2017), it is crucial to recognize the pivotal role that wild bees play in sustaining life on Earth (Concio, 2018). Unlike honeybees, whose pollination services are limited to a narrow range of plants, wild bees represent a vast and diverse group, numbering approximately 20,000 species worldwide. In the city of Amsterdam alone, a remarkable 104 distinct species of wild bees can be found, each contributing to the intricate web of biodiversity. Over the past 120 million years, these bees have co-evolved with specific plants and flowers, forging complex, mutually beneficial relationships that are vital to ecosystem balance.

Wild bees are indispensable in maintaining not only ecosystems but also our food systems, as they pollinate crops essential for human consumption. Yet, despite their crucial role, wild bee populations have plummeted across Europe and beyond. Pesticide use, habitat destruction, disease, monoculture farming, and the cascading effects of climate change have all contributed to this alarming decline. In a surprising turn, recent studies have revealed that many wild bee species

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1 Die Zukunft, die wir wollen, muss erfunden werden, sonst bekommen wir eine, die wir nicht wollen. Widely attributed to Joseph Beuys; no primary source identified.

now fare better in cities than in rural or protected areas, where pesticide-laden groundwater, industrial agriculture, and ecological fragmentation continue to erode biodiversity.

While urban beekeeping is well-meaning and trendy, it adds complexity to the crisis. Honeybees, essential for agriculture, thrive in large numbers and often outcompete wild pollinators for nectar and pollen. In urban settings, this competition, driven by goodwill initiatives, is short-sighted and counterproductive. Expanding urban beekeeping strains already limited resources, further endangering native bee species already threatened by pesticides, disease, and habitat loss. Though honeybees themselves are not at risk, their dominance can disrupt the fragile balance needed for wild bees to survive.

This urban shift from rural to city spaces underscores both a crisis and an opportunity for short-term preservation. While traditional conservation areas have faltered in supporting pollinators, cities—often seen as barren concrete landscapes, hold unexpected potential as refuges for these vital creatures (Samuelson, 2018). However, for cities to genuinely nurture wild bee populations, intentional design and community engagement are paramount.

This is where RefuBees steps in. Rather than viewing urban space as a mere backdrop for human activity, the project reimagines the city and its inhabitants as a dynamic ecological partner. It fosters green alliances between citizens, city administrations, and interdisciplinary experts, recognizing that environmental responsibility is a shared endeavour, one that must be embedded within public culture, education, and design. The decline of bees is not merely a sign of impending ecological collapse; it is a powerful call to action for creative, systemic responses that begin on our streets, in our public squares, and, perhaps most importantly, on our balconies and backyards. In th is spirit, we have launched a broad citizen campaign, mapping the city of Amsterdam into 104 zones, one for each wild bee species, under the slogan, *Adopt a Wild Bee and Treat It to Its Favourite Flowers*[2].

Refubees' vision and methodology

The BeeTotem project is grounded in a philosophy that resonates with ancient practices of totemism, where symbolic relationships between humans and nature are central to understanding our place in the world. In this sense, the BeeTotem acts as a contemporary totemic symbol, reflecting our interconnectedness with the environment. It serves not only as a reminder of the balance required to sustain biodiversity but also as an invitation for humans to step into a reciprocal relationship with the natural world.

2 cf. https://refubees.org/adopt/

Figure 2 – *Transformation begins with small gestures: tending, watering, witnessing* (Ernst van Deursen), 2020.

Figure 3 – *The BeeCircus: A Mobile Ritual of Playful Ecology* (Mariët Sieffers), 2021.

The act of creating BeeTotems and engaging with them echoes the Epicurean belief that well-being emerges from harmony and connection with our surroundings. RefuBees cultivates this ethos through a fusion of art and ecological science, creating spaces that foster collective well-being and a grounded, enduring joy in meaningful cohabitation with nature. It's not about indulgence or escapism, but about shaping a sustainable, ethical existence that honours the interdependencies of life.

At the methodological core of RefuBees is a model of action-based, interdisciplinary collaboration. The project is co-led from the Urban Ecology Lab at Delft University of Technology, a platform exploring transformative approaches to creating environments that support the resilience of wild pollinators in urban settings. The artist, who also co-directs the Lab, initiated an international investigation into how knowledge institutions across Europe are addressing the ecological urgency to redesign urban environments for pollinator survival. This research culminated in the formation of an international peer review group, bridging scientific inquiry with artistic and civic action. However, most of these institutions remain within the domain of conventional research and are limited in their capacity to activate direct collaborations with local or city-supported initiatives.

RefuBees responds to this gap through embodied action research, an approach that not only studies but intervenes in urban ecologies. It translates scientific insight into public experience and shared stewardship. Each BeeTotem is co-created with communities and adapted to its specific urban, cultural, and climatic context, guided by the central ethos of RefuBees: what nurtures wild pollinators nurtures human and planetary well-being.

Through this iterative process, RefuBees reframes urban environments as living, co-habitable ecologies, spaces not of human dominance, but of mutual flourishing. The BeeTotems transform city streets into sites of ecological repair and relational renewal, where science, art, and civic participation merge to reimagine the urban fabric as a site for both biodiversity and belonging.

An interdisciplinary approach

Where art and science interwine

At the heart of RefuBees lies an interdisciplinary methodology that dissolves the conventional boundaries between scientific inquiry, artistic expression, and civic engagement. By merging ecological research with performative and participatory practices, the project transforms scientific data into lived, shared, and embodied experiences.

The BeeTotem installations serve as both ecological infrastructure and cultural artefact—symbolic, functional, and interactive. These site-specific structures not only support pollinator populations but invite communities into a deeper dialogue about their relationship with urban ecosystems. They are not static objects but catalysts for collaborative repair: living sculptures around which rituals, ceremonies, and educational activities unfold.

An essential extension of this ethos is the BeeCircus, a mobile, modular performance space that amplifies the project's outreach through immersive infotainment. Designed as a lightweight, non-anchored circus tent accommodating around 35 participants, the BeeCircus activates public space and transforms it into an intimate theatre for knowledge-sharing, storytelling, and collective imagination.

The BeeCircus is not just a show, it is a call to action. Blending humour, empathy, and radical imagination, it transforms passive spectators into engaged participants. Through performance, conversation, and ritual, the BeeCircus encourages local residents to rethink their agency within the ecological systems they inhabit. Audiences are invited to sign the bee covenant, participate in totem rituals, and imagine their neighbourhoods as sites of environmental stewardship.

This performative layer embodies the spiritual and symbolic dimensions of RefuBees: the BeeCircus and BeeTotem together form a contemporary ecology of myth and meaning. They speak to ancient modes of totemic understanding, reframed for a planetary urban future. Here, spirituality is not esoteric, but ecological, rooted in a shared recognition of interdependence between people, bees, and the city.

Crucially, the BeeCircus also serves as a training ground for "infotainers": a new generation of creative communicators who fuse environmental education with performance and play. These young talents, drawn from diverse backgrounds, are equipped not only with scientific literacy but with the artistic tools to inspire and mobilize. By cultivating a culture of "edutainment" rooted in empathy and experimentation, RefuBees extends its impact beyond any single site, nurturing a growing network of changemakers across Europe.

Together, the BeeTotem and BeeCircus form the dual backbone of RefuBees: one structural, the other performative, both dedicated to transforming awareness into joyful, embodied, and enduring ecological engagement.

The beetotem project
Sculpting ecological awareness in the city

At the heart of the RefuBees initiative is the BeeTotem, a unique blend of ecological function and artistic form. These sculptural, modular installations go beyond being public artworks; they serve as both ecological infrastructure and social catalysts, while also functioning as educational beacons. Each BeeTotem installation is specifically designed to support wild bee species by offering carefully selected flowering plants that provide essential nectar and pollen. For example, the Rampion Scissor Bee, a species native to the province of North Holland and Amsterdam, benefits directly from the local flowers cultivated within the totem and their hosts.

The BeeTotem is more than a structure; it's a tool for ecological preservation. Every totem showcases a hyper-realistic 3D print of a wild bee, with the dimensions and features meticulously designed. In collaboration with TU Darmstadt, where the most precise 3D scanning equipment in Europe is located, a collection of 28,000 photographs of a single bee specimen has been used to create a 12,000 times magnified 3D print of the bee's body. These prints, enabled by the archives of nature museums, offer an incredible level of detail, connecting people directly to the beauty and fragility of wild bees.

Each BeeTotem is designed around a principle of circularity, where human interaction initiates a chain of regenerative responses. Visitors nourish the totems with food and water; worms living within process these offerings, directly enriching the soil for the flowers that, in turn, offer improved nectar and pollen to wild bees. In this living cycle, people, plants, and pollinators are bound together in acts of mutual care. Circularity here is not just a model, it becomes a method of reweaving ecological relations, cultivating a deeper sense of responsibility through everyday gestures of stewardship.

Within the RefuBees framework, the BeeTotem's structural design, developed through collaboration with entomologists, botanists, and horticulturists, is grounded in recycling methods and utilizes high-end professional manufacturing. The result is an installation that not only responds to its specific urban environment but also integrates seamlessly into the city's ecological fabric. Moreover, the BeeTotems serve as community gathering points, encouraging neighbourhood interaction, education, and stewardship. The visibility and accessibility of these totems foster conversations about biodiversity while nurturing life, both human and insect.

Installed in the De Baarsjes neighbourhood of Amsterdam in 2021, the BeeTotems reflect RefuBees' commitment to place-based ecological

Figure 4 – *Heartbeat of a BeeTotem: A Ritual of Circularity. Collage by the author* (Hans Kalliwoda), 2019, illustrating the closed-loop ecological interaction between humans, organic waste, worms, soil and pollinators.

repair. Each new installation builds upon the previous one, creating a growing network of urban interventions that transform city streets into temporary sanctuaries for biodiversity. In this way, the BeeTotems contribute to the larger goal of restoring ecological balance within urban spaces, one installation at a time.

As R. Buckminster Fuller is often quoted[3]:

> If you want to teach people a new way of thinking, don't bother trying to teach them. Instead, give them a tool, the use of which will lead to new ways of thinking.

The BeeTotems do just that, offering a tangible tool for change and inspiring new ways of thinking about our relationship with the natural world.

Global reach and impact

Though rooted in specific neighbourhoods, RefuBees is rapidly evolving into a model with international resonance. As cities across Europe and beyond confront biodiversity loss, the pressures of climate adaptation, and

3 Attributed; original source unverified.

a growing need for civic engagement, the project's modular and scalable approach has garnered increasing interest. What began in Amsterdam is now inspiring urban ecological initiatives abroad, due in large part to its adaptability across cultural, climatic, and political contexts.

RefuBees collaborates with institutions such as Naturalis Biodiversity Center (Netherlands), Haus der Natur (Salzburg, Austria), Delft University of Technology, the Technical University of Munich, and many individual specialists, becoming a growing transdisciplinary network of ecological, cultural, and scientific partners. These collaborations not only deepen the scientific foundation of the project, but also foster locally grounded interpretations—making each BeeTotem installation site-specific and meaningfully embedded within its community.

What makes RefuBees uniquely translatable is its hybrid identity: a fluid framework at the intersection of art, ecology, and civic design that crosses disciplinary and national boundaries with ease. It offers not a fixed template but a responsive framework, one that invites reinterpretation while remaining anchored in its core ethos: wild bees as indicators of ecological well-being, and the urban landscape as an active agent in nature's recovery.

If this kind of action research aligns with your vision for sustainable urban transformation, we invite you to get in touch.

From awareness to action

RefuBees embodies a form of action research that doesn't merely raise awareness but activates collective agency. Rooted in situated urban interventions, the project fosters dialogue, participation, and long-term ecological engagement. In this sense, it reflects broader shifts in urban practice, away from top-down planning and toward distributed, co-created futures.

One notable initiative aligned with this ethos is the Green Future Alliance (Toekomstverbond GROEN Amsterdam), a manifesto co-initiated by the artist and a core group of citizens, experts, and organizations. The manifesto calls upon the municipal council to establish a new pact for the city's green future, emphasizing a structural shift in how public, private, and civic actors collaborate. It advocates for a practice of "nature's voice at the table" (Revill, 2020), where ecological perspectives are integrated not only into spatial design but into governance, finance, and education.

The manifesto translates vision into actionable agendas, such as integrating nature-inclusive standards into building codes, embedding ecosystem services in financial reporting, and creating opportunities for urban agriculture and green education. It shows that awareness is not enough, what is needed is a common framework for action that redefines ownership, responsibility, and the role of the urban citizen.

Figure 5 – *We are RefuBees: Intervention in public space on the brink of extinction* (Bob Jonk), 2016.

Figure 6 – *Planting Futures: Community Ceremony of a BeeTotem in the Neighbourhood* (Mariët Sieffers), 2021.

This directly strengthens the RefuBees model: an ecosystem of care rooted in artistic and scientific collaboration, where green infrastructure becomes a shared cultural project. Through its site-specific interventions and global network, RefuBees contributes to a growing constellation of urban green initiatives that are reshaping cities not only as spaces of habitation, but of ecological restoration and civic imagination. Connecting it to the GROEN Amsterdam manifesto elevates it to a structural political proposal, a cultural intervention as its best (Mos, 2023, 16:30).

Conclusion

RefuBees offers a luminous case of how contemporary art can move beyond critique to prototype new realities. Merging ecological science, public ritual, and creative activism, it reclaims the city as a site not of loss, but of refuge. Its BeeTotems are more than sculptures—they're interfaces of care, linking species, systems, and citizens in acts of mutual regeneration.

In this work, transformation is not metaphor but method. Art here does not wait for validation; it acts, adapts, and aligns itself with the pulse of place. Yet pioneering such unsolicited practices often means treading a lonely, resistant path. Institutions still police the boundaries of what counts as art, who belongs, who is funded, who is seen.

RefuBees persists anyway. Not by asking permission, but by assembling new futures, one pollinator, one practice, one place at a time. Like the Dutch law of "Spreidingswet", which seeks to evenly distribute care and responsibility for newcomers across the country, RefuBees disperses ecological attention throughout the city, one BeeTotem for one species of bee, insisting that regeneration is a shared, not segregated, task.

In this context, RefuBees also reopens the question of what constitutes a sculpture, and what makes it social. While "social sculpture" is often evoked but rarely grounded, here it becomes tangible: not an object but a choreography of relations. A participatory ecology shaped by care, interaction, and shared space, a living form of public future imagination.

It's not just a project; it's a defiant challenge to the rules that decide what counts. RefuBees offers proof that real transformation doesn't ask for permission, it takes root in the cracks, grows from the margins, and reminds us that the future is cultivated, not curated.

REFERENCES

Naturalis (n.d.), *National Bee Count Working Together to Protect Wild Bees*, Publication Dutch Nature Museum Naturalis, https://www.naturalis.nl/en/about-us/collaborate/national-bee-count

Hallmann C. A. et al. (2017). More Than 75 Percent Decline Over 27 Years in Total Flying Insect Biomass in Protected Areas. *PLOS ONE, 12*(10), e0185809. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809

Concio, C. J. (2019). Bees Declared to Be the Most Important Living Being on Earth, *Science Times*. https://www.sciencetimes.com/articles/23245/20190709/bees-are-the-most-important-living-being-on-earth.htm

Mos, A. L. (Director). (2023). *On Pioneers* [Film]. InKader. https://debalie.nl/programma/de-koplopers-de-stad-als-natuurreservaat-26-06-2023/

Samuelson, A. E. et al. (2018). Lower Bumblebee Colony Reproductive Success in Agricultural Compared With Urban Environments. *Proceedings of the Royal Society B: Biological Sciences, 285* (1885), 20180807. https://royalsocietypublishing.org/doi/10.1098/rspb.2018.0807

Revill, G. (2020). Voicing the Environment: Latour, Peirce and an Expanded Politics. *Environment and Planning D: Society and Space, 38*(6), 1047–1064. https://journals.sagepub.com/doi/full/10.1177/0263775820944521

Reflections on the open workshop Habibi.Works

Or, how can our collective design lead to critical transformative practices?

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ABSTRACT

Since 2016 the open workshop Habibi.Works, located near Ioannina, Northern Greece, generates solidarities with and amongst people having to flee their home countries. It situates itself as a collective practice to act in solidarity and in support with humans arriving in Europe. Its collective approach aims for transformative processes at the intersection of art and design practices with different socio-political fields - through opening common spaces to counteract existing inequalities and racist structures. After introducing the workshop, the essay discusses, as central motive, how the daily support focussing forms of self-determination is interwoven with articulations on structural levels criticizing silencing, dominant hegemonies. By presenting two subprojects the artistic practices of Habibi.Works are further reviewed: From support on a day-to-day level to critical report on the situation on ground, or to provide a frame, where people can report on their situation. Finally, the essay reflects on challenges working in a context where borders manifest physically and with such differently privileged situatedness. To conclude an episode of "un-learnings" will question our supposed certainties we take for granted and thus scrutinizes power structures, inequalities and silencing concepts in dominant hegemonies. Next to the authors Effie Georganta, Ebi and Obada Hamza are quoted as protagonists of Habibi. Works.

KEYWORDS

Collective art and design practices, solidarities with migratory struggles, border regimes and migration control, transformative processes through counter-hegemonial articulations, unlearning

Figure 1 (opposite page) – Mobile version of Habibi Dome occurs in different cities in Europe (Photographer: Wittmann, Michael – Habibi.Works /Habibi Dome).

Introducing Habibi.Works

> A national border must not be a border in the search for safety and dignified living conditions!
>
> (Soup and Socks e.V., 2015)

This self-understanding of the non-profit organization Soup and Socks having founded and still carrying the open workshop Habibi.Works opposes increasing criminalisation and precarisations of humans arriving in Europe after fleeing their home countries. Being a platform for education, empowerment and encounters, Habibi.Works counteracts these precarisations by offering daily support, and by commonly developing information and counter-narratives. Thus, one can situate the open workshop as acting in solidarity with humans exposed to racists discriminations and marginalisations (Bönkost, 2021) - and as collectively generating counter-articulations against the structural inequalities and dominant hegemonies causing these exclusions: Habibi.Works (Figure 2) supports asylum seekers and humans arriving in Europe since 2016 and strengthens common practices beyond supposed borders.

Located near Ioannina (Greece), the open workshop provides different working areas, from kitchen, sewing atelier or wood workshop to new media lab, sound and music studio and a library, only to name a few. The open workshop is a common shared space and a counter practice in a context, where the access to basic human rights and social participation

Figure 2 – The open workshop Habibi.Works and its different working areas – impressions. (Photographers: Buff, Margot: top centre; Hapig, Mimi: top right, bottom centre and bottom right; Horsch, Florian: top left; Sanchez Brox, Andrea: bottom left).

is not guaranteed and therefore determined by inequalities. By providing space focussing on self-determination Habibi.Works is a place to meet and exchange with local communities and residents around Ioannina. In opposition to paternalizing or excluding structures it aims to generate impact on five levels:

(1) Living conditions: Repairing and producing what is daily needed;

(2) Education: Pursuing personal interests, sharing knowledge and learning skills;

(3) Well-being and mental health: (Re-)gaining self-confidence and experiencing self-effectiveness;

(4) Social encounters: Getting to know people from other contexts and reducing prejudices;

(5) Political awareness in Europe: Establishing counterpoints against populist right-wing narratives.

Interweaving daily support with articulations criticizing dominant hegemonies

> Habibi.Works is a human body. All parts of the body work together and independently at the same time. They are equal, interconnected and inextricably linked. In order for this body to function and exist, the harmonious movement of all the members is performed. On the same time, each part of it, is unique, separate and autonomous.
>
> (Georganta, 2020)

Effie Georganta, (former) team member, uses metaphors of human physicality to highlight solidarities interweaving different forms of collaboration and struggles to a shared entity but still inevitably treating each human as unique. In its collective approach the open workshop considers participants as "the experts of their own lives" , knowing best what to do in their situations (Habibi.Works, 2024). The workshop sets up a framework within which protagonists can generate self-determination, access to (informal) education and social participation, by themselves. Being in the politically-induced situation of having to wait, with very little information about their future, the participants shall be encouraged to create a perspective of self-determination in their daily lives. This approach has an incomparable impact on people's current living situations (for example, hanging curtains to create privacy within the containers, so that women can take off their headscarves or change at ease), on their motivation to continue or to use their education (experts sharing their skills, students continuing their education online, teenagers who have never had access to school

being encouraged and empowered to build skill sets and follow their interests), and on their confidence to build an independent life within European societies (growing a personal and professional network with locals and Europeans, gaining a sense of confidence).

To foster this active, self-determined perspective of its participants, Habibi.Works explores non-competitive, empowering ways of working together. All protagonists are invited to contribute their ideas, to partake in decision-making, to take over responsibilities and to generate ownership (for example, offering a guided activity within one of Habibi. Works' workshop areas, committing to participate in bigger projects or providing feedback and advice at the monthly community meetings).

Habibi.Works searches not for ready-made, standardized solutions but for forms of collective actions, un-learnings and articulations. Its transformative work intends to be aware of and try to strengthen alternative, silenced and non-dominant knowledge practices.

To not only compensate marginalisation our societies and political systems are causing, are unwilling or unable to react to and therefore to not perpetuate hegemonial inequalities, Habibi.Works interweaves a daily support with articulations criticizing forms of silencing within dominant hegemonies.

The situation at the European borders is marked by exclusions and uncertainties for newly arriving people and forms of Islamophobic and racist discriminations. Habibi.Works regularly informs audiences throughout Europe about these conditions and counter right-wing narratives in creative, engaging, yet clearly critical ways. The channels include monthly newsletters, social media campaigns, demonstrations and speeches, at the European Parliament as part of the SickofWaiting initiative (2017), and the participation in academic and public discourses.

In response to structural inequalities and discrimination Habibi.Works formulates counter-hegemonial articulations, as through expressing a disagreement with the term "refugee crisis" The carrier of symptoms is rarely the cause of the crisis. A more systemic overview is required: the symptoms along the European borders are not caused by the people who flee their countries.

They are the consequence of global interrelations and conflicts, which lead to exploitation, war, persecution and poverty. These conflicts are at least partly the offspring of colonial legacies (Varela & Dhawan, 2020), of racism and of the exploitation of human and natural resources (Brand & Wissen, 2017). The most obvious symptoms in this humanitarian and political crisis - the conditions in camp constructions for asylums seekers - are caused by political unwillingness to provide more dignified and sustainable solutions. By re-framing discriminating terms in (everyday) language Habibi. Works focusses articulations against racist, Islamophobic discriminating structures and considers itself as an anti-racist practice.

The workshop position itself as a collective body and counter position against dehumanisations of asylum seekers through regimes of migration control by the Global North. By doing so it searches for alliances within struggles highlighting an empathy against structural ignorance (Güleç & Schaffer, 2017). The collective projects and articulations of Habibi.Works address an empathy against structural, racially motivated silencing as well as an empathy against ideas of pity or "help from above" through privileged protagonists leading to paternalistic, disempowering effects and victimizations.

Showing Habibi.Works' design practices

The subprojects Storytellers' Lab and Habibi Dome

> Europe, don't lose all the different colours.
>
> (Ebi, 2022)

Being part of the Storytellers' Lab and contributed via a nickname Ebi's statement marks a reclamation of agency against a victimization in a passive role as asylum seeker (Figure 3). In Habibi.Works' practices it became increasingly important to not only report on the political situation on ground, but to also set frames in which people can report on their situation and share their own stories and ideas. This also led to a small sub project within Habibi. Works, the Storytellers' Lab (Figure 4) as a platform where people can contribute their perspectives. The intention is to make visible all the different narratives and situatedness around Habibi.Works and to counter victimizing stigmatizations as so-called "refugees". This narrative workshop area intends to value and foster non-dominant and silenced forms of knowledge.

The subproject Habibi Dome is both a collective construction project and an open platform for public space. In 2016/17 it emerged in Habibi.Works (Figure 5) as a counter articulation in a context where borders manifest physically in camp structures where asylum seekers have to live in years of waiting in uncertainty. For the building process the Geodesic Dome construction after Richard Buckminster Fuller, with its ambivalent use throughout the decades between ultralightweight construction, also in military use, (Joachim Krause and Claude Lichtenstein 1999) against an iconic symbol in the sixties' counterculture (Blauvelt and Walker Art Center 2015) and its nowadays online freely accessible construction plans, was used as existing adaptable knowledge and as reflections for which purposes images and technology are used.

Following the commonly taken decision to build a dome construction as a self-determined space the aim was to foster accessible decision-making and design processes, while at the same time being aware that

Figure 3 – Ebi's statement "Europe, don't lose all the different colours" was postered in big letters on the mobile version of Habibi Dome in public space in various cities as an articulation within civil societies. When installed in addition to this statement the billboard on the outside of the dome construction is used to invite the contributing protagonists and projects to raise a question and/ or statement within the urban public space each day. (Photographer: Wittmann, Michael – Habibi.Works /Habibi Dome, 2023).

Figure 4 – The Storytellers' Lab – a workshop area to collect and share narratives around Habibi.Works, to reflect on the project as such and to generate counter articulations to existing inequalities and racist discriminations. (Photographers: Hapig, Mimi: bottom left; Wittmann, Michael (Habibi.Works /Habibi Dome): top right; Video project in the Storytellers' Lab in Habibi.Works: top left, bottom right).

an absolute absence of hierarchy is impossible. (Arnstein, 1969). A 1:10 scale model allowed to communicate without a common language and made design decisions as accessible as possible for everyone. A wooden roof leading to a permanent space meant for many participants a statement against the situation of having to live in camp structure.

In 2018 a mobile version (Figure 6) was created alongside the permanent space in Habibi. Works, which is still in use as the sound and music studio hosting the Storytellers' Lab among others. The mobile version has appeared at various locations across Europe and marks a connection to the open workshop Habibi.Works. In public space the mobile version is an open platform for discourse about questions which forms of solidarity we can imagine. Habibi Dome is a collective artistic expression and anti-racist articulation in public space[1].

"Un-learnings"

A conclusion in challenges and reflections

These concluding "un-learnings" emerged from not yet published excerpts of the dissertation within the PhD project of Michael Wittmann.

The reflections on our work are not meant to be one-to-one repeatable, standardized solutions, but to be seen as un-learnings questioning our presumptions and supposed certainties, and leading to further discussions:

The question of access is political!

The access to a kitchen to cook one's own food, the access to tools to build and repair things of daily need, is a question of self-determination and thus a highly political question. Connected are accessibilities to share one's ideas and skills, to learn, to teach and to work – the accessibility to social participation.

The access to design is political. Our design strategies must be critically situated within these questions by generating safe spaces where knowledge can be shared, and new knowledge forms can emerge.

Power structures deny accesses!

Habibi.Works' intends to set frames where self-determination can be generated in collective settings by participants themselves. Simultaneously our open workshop necessarily names underlying power

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1 The current project team of Habibi Dome includes Obada Hamza, Franziska Wirtensohn and, of course, the team of Habibi.Works.

Figure 5 – Habibi Dome as a commonly built workspace in the outside area of Habibi.Works, currently hosting the sound and music lab and the Storytellers' Lab. (Photographers: Bertoldo, Lucas: top left; Habibi.Works: top right; Wittmann, Michael (Habibi.Works /Habibi Dome): bottom left, bottom right).

Figure 6 – Since 2018 the mobile version of Habibi Dome occurs in different cities in Europe, drawing connection lines between the open workshop Habibi Works and the civil societies of these cities. (Photographer: Wittmann, Michael – Habibi. Works /Habibi Dome).

structures denying accesses and names structural racisms that lead to the precarisation of humans arriving in Europe after having to flee their home countries. This means to counter a border regime Europe in which asylum seekers are put into situations of waiting for years of uncertainty and forced inactivity, often in prisonlike camps.

Framing and naming forms of racism, sexisms or multi-sectional discriminations in the existing dominant hegemonial order (Mouffe, 2013) must be interwoven with intentions to develop counter articulations, through channels where people can report on their situation and share their perspectives.

Transformative practices mean both: generating accesses and name inequal power structures!

As questions of accessibilities and excluding power structures are deeply connected both aspects are relevant: First, accesses, in terms of alternative, critical practices including the perspectives of humans and more-than-human actors – and second, making visible existing power structures and inequalities: To combine daily support with collective counter-articulations is an "un-learning" to prevent our day-to-day work from becoming a compensation for a structural failure on a pan-European level, which could otherwise crossfade structural failures and socio-political issues.

Within the context of intersectional crisis a project can easily reinforce prejudices and inequalities if critical reflections are missing (Demos, 2019). Banz (2016) draws an analogy for (social) design with Rancière's (2007) analysis: socially or politically engaged design and art could otherwise take over the responsibilities of reticent politics and state institutions.

Who is profiting?

Being aware of our own privileged situatedness, our design practices may not lead to forms of cultural appropriation. Our framing of the context and communities we work with may not perpetuate inequalities and prejudices (Terkessidis, 2015, S. 187-190): Whereas the name of the association Soup and Socks may lie in thinking of first "emergency responses", the name Habibi.Works includes the in the beginning days of the workshop very present Arabic term for friend, in the intention to reflect different languages of humans involved and in distinction to cultural appropriation.

Habibi.Works operates within contexts in which basic human rights are not granted, and opportunities depend on factors such as nationality. Initiating an open workshop in this context generates power dynamics between initiators and participants. Many don't have privileges like the freedom to move or years of education. Manifesting Inequalities must

be critically reflected in the daily work (Freeman, 1970): How can we contribute to fair, just and liveable futures for all of us?

It is not only about our own view as designers!

Claiming socio-political relevance in processes of transformation leads to collaborative action. We can't "design" socio-political processes but only contribute together with others. This collectiveness doesn't mean uncritical understandings of consensus, but contributions to the negotiation and agonistic struggles about dominant hegemonial power structures (Mouffe, 2013).

By including participants Habibi.Works reflects what Yassin al-Haj Saleh (2018) discussed in his article *Critic of Solidarity* to not repeat the silencing and precarization of marginalised groups.

Value different forms of knowledge!

Reflecting on own's one – often privileged – situatedness is a necessary precondition: Practices like mutual learning or working together on eye level are only possible, if different forms of knowledges can be brought in. In this sense learning cannot be a one-dimensional knowledge transfer from a supposed teacher or project initiator to participants. We must focus common, experimental ways of alternative re-learning and un-learning. By working with (unseen) knowledge practices from everyday lives, we want to develop practices for transformation.

Empathy in transformative processes!

Habibi.Works perception of an empathy against structural ignorance (Güleç & Schaffer, 2017) is connected to an understanding of Isabelle Fremeaux and Jay Jordan (Fremeaux & Jordan, 2021) emphasizing next to a "No" in terms of counter agitations especially a "Yes" in political struggles as shared and joyful caring for each other. To illustrate this conception the essay concludes with a statement by Obada Hamza (2022):

> The idea got me excited (...). That same day I had an odd feeling, a beautiful feeling of putting a smile on people's faces.

> From that day my relationship evolved with these people who I used to consider strangers, I started to feel as if with my family. I saw respect, attention and solidarity from people coming from all over the world (...)

REFERENCES

al-Haj Saleh, Yassin. (2018). A critique of solidarity. *Aljumhuriya Online*. https://aljumhuriya.net/en/2018/05/18/a-critique-of-solidarity/

Arnstein, Sherry R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35* (4), 216–224.

Banz, Claudia. (2016). Zwischen Widerstand und Affirmation. Zur wachsenden Verzahnung von Design und Politik. In Claudia Banz (Hrsg.), *Social Design. Gestalten für die Transformation der Gesellschaft* (S. 11–25). Transcript.

Blauvelt, Andrew & Walker Art Center. (2015). *Hippie Modernism. The Struggle for Utopia*. Walker Art Center.

Bönkost, Jule. (2021). IDB Paper No. 9—White Allyship: Keine Selbstbeschreibung, sondern Handeln. *Institut für diskriminerungskfreie Bildung,* 9. https://diskriminierungskritische-bildung.de/wp-content/uploads/2021/07/IDB-Paper-No-9_White-Allyship.pdf

Brand, Markus, & Wissen, Ullrich. (2017). *Imperiale Lebensweise. Zur Ausbeutung von Mensch und Natur im globalen Kapitalismus.* Oekom.

Demos, T. J. (2019). Climates of Displacement. From the Maldives to the Arctic. In Burcu Dogramaci & Birgit Mersmann (Hrsg.), *Handbook of Art and Global Migration. Theories, Practices, and Challenges* (S. 192–214). De Gruyter.

Ebi. (2022). *Europe, don't lose all the different colours.*

Freeman, Jo. (1970). The Tyranny of Structurelessness. *Berkeley Journal of Sociology, 17,* 151–165.

Fremeaux, Isabelle, & Jordan, Jay. (2021). *We Are „Nature" Defending Itself.* Pluto Press.

Georganta, Effie. (2020). *Habibi.Works is like a human body…*

Güleç, Ayşe, & Schaffer, Johanna. (2017). Empathie, Ignoranz und migrantisch situiertes Wissen. Gemeinsam an der Auflösung des NSU-Komplexes arbeiten. In Julianne Karakayali, Cagri Kahveci, Doris Liebscher, & Carl Melchers (Hrsg.), *Den NSU Komplex analysieren. Aktuelle Perspektiven aus der Wissenschaft* (S. 57–79). Transcript.

Habibi.Works. (2024). *Habibi.Works website*. Viewed 7. October 2024, https://habibi.works/

Hamza, Obada. (2022). *Statement for the Video „Reflections on Habibi.Works".*

Krausse, Joachim, & Lichtenstein, Claude. (1999). *Your Private Sky. Richard Buckminster Fuller. Design als Kunst einer Wissenschaft.* Verlag Lars Müller.

Mouffe, Chantal. (2013). *Agonistics. Thinking the world politically.* Verso.

Rancière, Jacques. (2007). *Das Unbehagen der Ästhetik.* Passagen Verlag.

Sick of Waiting. (2017). *Reconnecting with Humanity, conference hall in the European Parliament, June 28th, online documentation.* https://sickofwaiting.org/acerca.asp?i=2&v=7

Soup and Socks e.V. (2015, 2016). *Soup and Socks: Vision and Mission.* https://soupandsocks.eu/de/vision-und-mission/

Terkessidis, Mark. (2015). *Kollaboration* (1. edition). Suhrkamp.

Varela, María do Mar Castro, & Dhawan, Nikita. (2020). *Postkoloniale Theorie. Eine kritische Einführung* (3. edition). transcript.

Nomadic artistic activism

Participatory art and decolonial music for ecosocial and epistemic justice

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ABSTRACT

This paper presents a transdisciplinary, nomadic project developed by Resonar Lab, a collective of artists, designers, and activists based in Berlin, Germany. The project consisted of an eight-week itinerant artistic tour in which the Resonar Lab team traveled by bicycle from Madrid to Berlin to support and collaborate with various ecosocial initiatives and movements across Europe through interdisciplinary artistic mediations. Integrating relational art, participatory design, and decolonial applied ethnomusicology, the project functioned as a living assemblage fostering epistemic empowerment, solidarity-based approaches, and creative participation. The tour included concerts supporting grassroots ecosocial initiatives, workshops on stress release for activists based on dance and music improvisation, and artist talks that showcased the community mediations carried out by Resonar Lab in South America, the USA, and Europe as forms of translocal solidarity. Grounded in the ethics of the gift economy, the project emphasized reciprocity and multidirectional solidarity from a decolonial approach. The paper describes the methodology and process behind the participatory creation of multimedia materials, including a participatory and multilingual music video created with 18 artists and performers. This case study reflects on how creative assemblages can contribute to climate, social, and epistemic justice while also activating hope and strengthening local resistance strategies. It invites a broader reflection on the role of transdisciplinary artistic practices in building collective agency and addressing the complex challenges of our time.

KEYWORDS

Transdisciplinarity, relational art, eco-social transformation, participatory design, decolonial applied ethnomusicology

Figure 1 (opposite page) – Resonar Lab on the road from Frankfurt am Main to Cologne. Photo by @magdalena.madoerin, Resonar Lab.

> (…) to the scores of individuals and families in every country on my route whose boundless hospitality taught me that for all the horrible chaos of the contemporary political scene, this world is full of kindness.
>
> (Murphy, 2011)

Introduction

In 1963, Dervla Murphy (2011), undertook a remarkable journey, cycling from her native Ireland to India during one of the coldest winters on record and against the backdrop of a globally volatile political landscape. The world stood in the midst of Cold War tensions, marked not only by ideological confrontation but also by the looming threat of nuclear war. Several anti-colonial conflicts were unfolding, particularly in Algeria, India, and Pakistan. This text presents a project inspired by Murphy's journey and other similar nomadic endeavors, offering a theoretical framework and contextual grounding for the work of Resonar Lab. It does so through the description and analysis of a specific transdisciplinary initiative: an eight-week collaborative and performative artistic tour from Madrid to Berlin, completed entirely by bicycle. The project seeks to explore how artistic, musical, and design-based practices can support ecosocial initiatives and foster cross-border solidarity (Resonar Lab, 2025, *Artistic Activism on Wheels*). This project exemplifies Resonar Lab's methodological approach and situates its practice within broader discussions on creative assemblages and collaborative social impact.

Resonar Lab is a collective of artists, designers, musicians, and activists based in Berlin, Germany, working through a transnational and translocal framework (Resonar Lab, 2025, *People*). While its coordination hub is in Berlin, many of its members are based in Latin America, Europe, and Asia. The collective operates through a dialogical, non-hierarchical structure in which decision-making is distributed among its participants. While our focus is to facilitate projects that take place on-site through participatory artistic mediations with communities and groups we work alongside, we also develop many collaborations remotely through shared online processes.

The mission of Resonar Lab is to promote artistic mediations and activist processes through three main areas of focus (Resonar Lab, 2025, *What we do at Resonar*). The first is environmental protection, grounded in collaboration with grassroots movements and ecosocial initiatives. The second is social justice, pursued through inclusive and participatory practices that recognize and amplify diverse voices. The third emphasis is critical thinking, understood as a space for cultivating and circulating

alternative epistemologies. This includes Global South (Escobar, 2016; 2017), feminist (Fricker, 2007; Medina, 2013; Acosta López, 2025), and queer perspectives (Hartman, 2019; Muñoz, 2019) that challenge dominant paradigms of linear capitalist progress and development (Escobar, 2001; Breidlid, 2013). The theoretical perspectives that inspire our collective share a critical view of Western frameworks that prioritize economic growth over collective care (Escobar, 2001; Mignolo, 2011a; Rivera Cusicanqui, 2018). In contrast, our approach focuses on integrative understandings of well-being, conceived as a relational system involving nature, collective life, and other-than-human actors (Gudynas, 2014; Walsh, 2015; 2020; Escobar, 2016).

The tour required transporting our equipment by bicycle for the entire eight weeks, including items such as computers, cameras, a drone, musical instruments, microphones, sound cards, tents, camping gear, and materials for the workshops, among other necessities. This presented both physical and design challenges, as we had to ensure not only the mobility but also the functionality and safety of our tools amid constant movement and changing environments. Our team operated as a mobile and dynamic assemblage, with five people assuming distinct and complementary roles based on a set of shared principles defined in advance. Two members focused on performance, public presentations, and guiding workshops. Two others were dedicated full-time to audiovisual documentation, capturing the project's development across different contexts. One person was responsible for logistics, coordination, and technical support throughout the journey. While these roles provided structure, they remained flexible and expansive, allowing us to maintain cohesion while adapting to the evolving conditions of our nomadic venture.

The project described in this paper is grounded in the concepts of *machinic assemblage* and *collective assemblage of enunciation*. The former refers to the material and functional components of our project, such as tools, technologies, and our bodies, which act together in an organized manner (Deleuze & Guattari, 1987, p. 90). The latter designates a structured system of meaning involving language (Deleuze & Guattari, 1987, pp. 88–89), signs, visual elements, and, in our case, communicative artistic and design practices. The conception of the project placed radical imagination (Reinsborough, 2010; Haiven & Khasnabish, 2014; Castoriadis, 2016) at its core, serving as a guiding force for movement and for envisioning possible futures.

The guiding question of this paper is the following: How can relational art and music-based practices foster eco-social solidarity and activations across borders from a decolonial approach?

Theoretical and methodological framework

Resonar Lab is a transdisciplinary collective founded in 2018 by a group of friends, grounded in the idea that the phenomenon of resonance (understood both acoustically and metaphorically) offers a powerful lens for understanding social life (Chaparro, 2024). We believe that art, music, and design play a central role in amplifying and expanding creative ideas that contribute to positive social impact. Our practice is oriented toward creating artistic experiments that affirm the potential of art to foster civic agency (Sommer, 2006; 2014) through critical thinking, solidarity, and co-creation approaches.

Our understanding of transdisciplinarity is rooted in dialogue and diversity (Johnston, 2008; Borgdorff, 2012; Garcés, 2015). The collective is composed of individuals from four different continents who have lived and worked in a variety of cultural contexts. This diversity informs our shared commitment to empathy and our decision to operate in a selfless, collaborative manner to address the global ecosocial crisis. Deleuze and Guattari's (1987, p. 513) understanding of the assemblage as a living abstract machine resonates with the way we mediate the heterogeneous backgrounds and perspectives within our collective. We seek fluidity in our modes of operation and decision-making, remaining interconnected with the people, environments, and other assemblages we engage with. This relational orientation requires continuous revision of our internal dynamics, aiming to operate critically within the tension between structure and flexibility.

Relational art is a key influence on our work (Bourriaud, 2020). We seek to take art beyond traditional institutions such as museums, galleries, and universities, and instead engage directly with artists, activists, collectives, and other social formations working in direct and situated ways with people in their everyday realities. Our approach is grounded in decolonial thinking, particularly the Latin American decolonial political project (Castro-Gómez, 2007; Dussel, 2011; Escobar, 2016; Maldonado Torres, 2007; Mignolo, 2011b; Quijano, 2007). Central to this is the embodied practice of regarding different knowledge systems on equal terms (Mignolo, 2011b; Walsh, 2015): the understanding that the situated knowledge and modes of knowing of those we work with are as valid and valuable as our own. We refer to this form of interaction as *energetic exchange*, a concept that emphasizes mutual recognition and the equal valuation of all participants' energies, intentions, and insights.

Our participatory methodologies are inspired by both relational art and participatory design (Suchman, 2007; DiSalvo, 2015; Chaparro & Manzini, 2009; Sanders & Stappers, 2021). We employ these strategies to co-create with those we engage, adapting to each context through shared and dialogic learning. Decolonial applied ethnomusicology (Mackinlay, 2015; Sardo, 2018; Przybylski, 2018; Roy, 2022) further informs our practice by critically rethinking

the role of the researcher and musician when working with diverse groups. Rather than reproducing extractive or hierarchical dynamics, we embrace transcultural mediation, equity, respect, and multicultural musicking. This perspective acknowledges the colonial legacies embedded in economic, academic, and cultural relations and confronts the systemic injustices that persist in the current global order (Berger, 2008).

These epistemic foundations shape our commitment to the principles of the gift economy, moving beyond the logic of profit- and money-based exchange that dominates capitalist societies (Graeber, 2014; Federici, 2018). In every project, we aim to learn from the organizational logics, resistance strategies, and resilience of the assemblages we collaborate with, whether they are collectives, communities, or movements. In turn, we share our own knowledge, previous experiences, and creative resources without restriction, while remaining critically aware of our positionality, particularly our academic training and the way in which academia both biases our understanding of diverse social realities and produces epistemic privilege through socially recognized forms of knowledge and authority, which are not inherent but socially constructed and maintained (Fricker, 2007). Our engagement is informed by feminist theories of critical positionality (Fricker, Graham, Henderson, Pedersen, & Wyatt, 2020), which require us to make transparent our backgrounds, intentions, and positions when entering into creative dialogue with others.

The mediations we design to facilitate energetic exchanges are aimed at enabling dialogic learning and co-creation that contribute to ecosocial transformations. We understand this practice through the lens of *assemblage thinking*, as developed by Deleuze and Guattari (1987), which emphasizes systems that are heterogeneous, fluid, non-hierarchical, and continuously evolving. This stands in contrast to the rigid, linear, and hierarchical paradigms that often dominate academic and institutional frameworks. At Resonar Lab, we think of our collective as an open textured, living organism that interacts with other assemblages (people, institutions, and environments) from a deterritorialized and commons-oriented perspective.

During our nomadic artistic tour, this theoretical orientation took form in practice. Constantly on the move, we met new people daily, visited numerous cultural centers, festivals, and events, and adapted to each situation by sleeping in tents, staying in strangers' homes, and transforming our gear into tools for engagement and relational making. Our instruments, cameras, and other devices functioned both as interfaces, facilitating connection across diverse contexts, and as catalysts that activated shared experiences and co-creative encounters. The project, in this sense, was not only a collaboration but a mobile assemblage with porous membranes. It blurred the boundaries between

the inner structure of the collective and the project, and the broader environments and actors we encountered along the way.

This mobile assemblage was carefully planned around shared principles, yet it also embraced contingency, improvisation, and nonlinear development. The complexity of our approach, situated between planning and spontaneity, shaped both the creative processes and the problem-solving strategies we relied upon. The following section describes the unfolding of this project in greater detail.

Description of the project

It is difficult to describe in just a few paragraphs a process that took one year to plan and eight intensive weeks on the road, especially when, as a team, we try to recall the experience and it keeps expanding into our awareness due to the multiplicity and variety of people, places, environments, and stimuli we experienced. Knowing that from previous projects, we took seriously the activity of daily journaling, which allows me, in this case, to take a critical distance to describe the process.

We began planning the trip one year in advance. We had prior experience with nomadic artistic endeavors in Colombia, where we visited several regions, including remote locations in the jungle and the Caribbean coast, and worked in complex contexts, often with vulnerable populations. We had also toured Argentina, the United States, and parts of Germany, where members of our collective carried out a bike journey from Berlin to France. These experiences informed our planning process and gave us a strong foundation to build upon[1].

We started by reaching out to our existing network. We had contacts of individuals and like-minded organizations in Spain, France, Switzerland, and Germany, and began reconnecting with them nearly a year in advance. Simultaneously, we sought out new groups and partners to collaborate with. Our planning and logistics meetings took place regularly online, as two members of the team were not based in Europe at the time. It is impossible to list here all the organizations, artists, activists, and friends who made this project possible due to the constraints of this format, but I would like to highlight a few whose support was particularly meaningful: Radio Pardinhas in Spain; Topophone in France, along with their Music Education Network MEED; the Heitere Fahne in Switzerland; and, in Germany, the African Music Festival in Karlsruhe, the Montag Foundation Art and Society and the Petit Papillon Initiative in Cologne, and the Kartell Kultur in Bremen.

The narrative of the tour was built around two structuring practical elements: the route, from Madrid to Berlin, and the identification of key

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1 Cf. https://resonar.net/projects

Figure 2 – Concert in Karlsruhe at the African Summer Festival, 2024. Photo by @magdalena.madoerin, Resonar Lab.

Figure 3 – Artist talk at the DaD, By Design and by Disaster Conference, Bolzano, Italy, 2024. Photo by @magdalena.madoerin, Resonar Lab.

locations. We determined the trip would last eight weeks to allow time for immersive engagement without the pressure of constant travel. Once the itinerary was confirmed, we defined our offer, which consisted of three main elements: concerts (Figure 2), talks (Figure 3), and workshops (Figure 4).

The concerts followed a gift economy approach, which is central to our collective practice. We try to engage diverse audiences through our music, using its potential to generate experiences of communal joy (Baldwin, 1979). As a team, we regularly organize jam sessions rooted

in Afro-Latin traditions, drawing from Afro-Indigenous music of the Americas, e.g., Cumbia, Blues, Hip-hop (Gilroy, 1993). I also contribute through my own music band, TXAP[2], which cross-pollinates musical and inspirational influences with Resonar Lab's work. The concerts were electroacoustic and adaptable. We carried synthesizers, a compact travel guitar, transverse flutes, blues harmonicas, microphones, loop machines, sound cards, and computers. This allowed us to perform both in intimate, unplugged settings, in public space, and on more equipped stages. Our repertoire is inspired by music of resistance, particularly a mix of Cumbia, Blues, Hip-hop, and Salsa, with electronic sounds.

The talks were structured around past projects relevant to the organizations we wanted to visit. We relied on our systematically organized archive of previous work, allowing us to adapt the content to each context. The workshops focused on stress release for activists through music and dance improvisation. They were developed collectively in a project I led at the University of the Arts in Berlin. Drawing from trauma release methods and the rhythmic concept of groove from Afro-Indigenous traditions, especially Bullerengue and Cumbia, we crafted a format we had already tested on a previous tour (Resonar Lab, 2023). The workshop was adapted depending on the time and facilities available at each venue.

Our intention was to visit like-minded organizations whose work aligned with one or more of our core axes: social justice, environmental protection, and critical thinking. We sought spaces that foster diversity, empathy, and, when possible, alternative epistemologies, including Global South, feminist, and queer perspectives.

Given the physical and logistical demands of the tour, we planned carefully what we could carry. Based on past experience, we trained in advance and selected only what was absolutely necessary for both our performances and our survival on the road.

Transdisciplinary integration

Relational art, as coined by Nicolas Bourriaud (2020), defines a type of artistic practice that prioritizes human interactions in specific social contexts over the production of autonomous art objects. This concept strongly aligns with our practice. We deliberately take art outside the traditional institutions in which it is often produced and promoted, and instead work to foster participatory situations and collective experiments. Our approach is about creating shared moments of presence and interaction, not just presenting finished samples of our work.

This approach connects closely with the sociology of resonance, which

2 Cf. https://linktr.ee/txap

Figure 4 – Workshop on Music and Dance Improvisation Inspired by Trauma-Release Exercises. Photo by @magdalena.madoerin, Resonar Lab.

Figure 5 – Concert at the Kartell Kultur Festival in Bremen, Germany, 2024. @magdalena.madoerin, Resonar Lab.

is framed as an alternative to alienation and the increasing social acceleration of capitalist societies, understanding resonance itself as a phenomenon that enables a transformational expansion of human experience and agency in the world (Rosa, 2019). While resonance is an elusive phenomenon that resists orchestration (Schiermer & Rosa, 2020), we believe it is still possible to cultivate the conditions in which it can manifest. Our project was intentionally designed to do so: to cultivate

contexts in which connections (acoustic, affective, emotional, political) might emerge. In this sense, relational art becomes, for us, a methodology of nurturing the conditions in which resonance may emerge. *Resonar* means "to resonate" in Spanish. We designed the tour to facilitate shared experiences, where art, music, and design intertwine. Music, in particular, functions as a magnet. It draws attention, anchors presence, and opens a space for affective interaction and bodily attunement.

This commitment also intersects with the principles of decolonial applied ethnomusicology. Ethnomusicology may be defined as the study of how groups of people make music, while applied ethnomusicology moves this knowledge into the realm of practice, focusing on how music can have social and cultural impact (Pettan & Titon, 2015, p. 6). Decolonial applied ethnomusicology goes a step further. It critically examines how research practices and disciplinary identities in the music field have been shaped by historical power relations and colonial legacies (Mackinlay, 2015). It calls for a revisioning of research practices in music, one that foregrounds epistemic justice, equity, and respect for cultural diversity.

We draw from this approach the need to reflect historically and critically on how we engage with others, especially when using ethnographic tools. For us, these tools must be treated as situated and embedded in a legacy of Eurocentric academic hegemony (Berger, 2008, p. 66) that we must actively unlearn. Relational art and decolonial applied ethnomusicology share many principles, even if they operate through different media. In practice, we observed how the boundaries between these frameworks blurred throughout the tour. Both enable the creation of spaces for interaction and social connection, and their integration allowed us to use different strategies drawn from both fields.

Music was our entry point (Figure 5), but from there we moved into dialogical artistic experiments. In our workshops, we incorporated principles of participatory design, particularly as articulated by Sanders (2021), who emphasizes how tools, props, and minimal materials can stimulate creativity and communication in collaborative contexts. Given our constraints in transporting materials, we used simple elements and bodily interactions to facilitate connections: stickers, QR codes linking to websites and exercises for our workshops, body percussion, and physical interactions between participants to illustrate several principles. We also drew from the work of DiSalvo (2015), who views participatory design as a process to foster social and political engagement, using design artifacts as tools for reflection, debate, and collective awareness.

Ezio Manzini (Chaparro & Manzini, 2009), whose work on social innovation and participatory design has been especially influential for us, emphasizes how everyday communities already design creative solutions to their challenges. The role of the designer, for Manzini, is to support and refine these bottom-up innovations, to help represent, organize, and

articulate them. Our project was also influenced by the work of Suchman (2007), particularly her feminist critique of ethnographic practice and its relation to the understanding of technology as a social practice. Suchman calls for a revision of the Eurocentric assumptions underlying traditional research methods, challenging us to be more attentive to the relational dynamics that shape knowledge production and material culture. Her work offers a framework for questioning not only what we study, but how and from where.

Finally, nomadism articulates the methodological approach of our practice and our approach to transdisciplinary practice. Following Deleuze and Guattari's concept of the *nomadic war machine*, understood as exterior to the State apparatus (Deleuze & Guattari, 1987, p. 351), we understand our movement across geographies as both a political and artistic gesture, both structured and improvised. This form of mobile practice allowed us to cross physical and affective boundaries, to enter new contexts not as tourists or outsiders, but as temporary collaborators and partners, celebrating the hospitality and generosity of those who welcomed us into their homes, offered us food and conversation, and joined us in music and dance.

This ties back to Bourriaud's concept of the radicant artist (2009), where he describes a type of artist who moves across contexts, adapting and co-creating through responsive interactions. Nomadism, in this sense, becomes a critical artistic methodology in a hyperproductive globalized world, where time and value are often reduced to measurable outputs. Against this logic, our project activated something else, something slower, more subtle, and relational. One of the most powerful outcomes of the tour was to feel, on a regular basis, the solidarity and openness of strangers. We experienced countless moments of spontaneous generosity, often from people outside the conventional art world, and found ourselves deeply inspired by the initiatives and individuals we had the privilege to work with.

Social impact and reflections

When we finished the project, we began producing the documentation material. This process felt like revisiting all the places we had been, as we classified and organized the audiovisual content. It gave us a panoramic view of the journey and helped us understand the scope and rhythm of what we had experienced. One of the most significant outcomes of the project was the strengthening of our network. We deepened the ties with existing organizations and opened new doors for future collaboration.

For instance, we were invited to participate onsite for the first time in the By Design and By Disaster conference in South Tyrol, Italy. There, we connected with diverse creative practitioners from across Europe,

including the student climate justice initiative from Humboldt University in Berlin. We later supported them with a concert during one of their public celebrations. These encounters also brought new collaborators to our podcast *El Barrio Global*, where we interview artists and activists involved in eco-social transformation and feature our music[3]. Many of the guests for our most recent episodes were people we met through this evolving network.

This chain of connections also led us to perform several concerts in Berlin, in support of different grassroots initiatives. We were able to participate for the third time in the MEED network, a European Union-supported platform for socially engaged musicians. Once again, we found inspiring alignments and fruitful dialogue with performers and musicians working across the continent. In cases where we could not travel back to destinations such as Portugal or southern Spain, we instead facilitated connections between collectives we knew in those regions. These collaborations continued the spirit of our nomadic tour and extended its impact.

In addition to building networks, we implemented an anonymous online feedback form, which we shared with the organizations and collectives we worked with. The overall balance of this feedback was highly positive. Respondents described the experience as inspiring and relevant to their work. The critique we received was mostly circumstantial, pointing to external challenges such as weather conditions or logistical unpredictability. The feedback was qualitative and based on three guiding questions: What did we do well as a collective? What could we improve? And finally, what ideas or future possibilities were sparked by our visit?

Internally, one of the most important transdisciplinary lessons we carried forward from the trip was the need for consistent and assertive communication within the team. This was made concrete through our practice of daily check-ins during breakfast, where we reviewed the previous day and made adjustments together. Equally important was our commitment to systematic journaling, which allowed us to reflect, process, and document our constantly shifting experiences. Given the number of people we met and the diversity of spaces we inhabited, this daily exercise became vital.

The primary challenges we faced, aside from the weather, were moments of intercultural communication friction, especially when encountering language barriers. To navigate these moments, we relied heavily on translation apps, gesture-based communication, and, when necessary, theatrical improvisation. These interactions became an unexpected part of our creative process, expanding the role of performance beyond the stage.

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3 Cf. https://linktr.ee/barrioglobal

In sum, the aftermath of the project was not a conclusion but a continuation. It marked the unfolding of relationships, insights, and collaborations that extended far beyond the trip itself.

Conclusion

The words from Dervla Murphy (2011) that open this paper resonate deeply with the spirit of our journey. Likewise, one of the most meaningful outcomes of our project was a similar reaffirmation. Even though the current global political landscape feels bleak and overwhelming, our daily interactions across villages, cities, and communities offered us something else. We encountered extraordinary moments of solidarity and generosity that gave us renewed energy and hope. We returned to Berlin recharged. This sentiment echoes the same conviction expressed by Murphy and remains one of the most important reflections we carry with us.

The experience also helped us embody the principles of assemblage thinking in a more conscious and practical way. We learned to stay flexible, to think relationally, and to function as a living, mobile assemblage. This reaffirmed the value of transdisciplinary practice rooted in nomadism, situated responsiveness, fluidity, and real-time co-creation. We were able not only to share our work, but also to receive new insights, meet inspiring people, and spark collaborations that continue to this day.

As part of this process, we co-created two key media pieces that capture the spirit and politics of the journey. The first is a short documentary trailer of the trip. The second is a participatory music video featuring 18 politically engaged artists, dancers, musicians, activists, and performers we met along the way. It is multilingual, collective, and full of the textures of the road.

We invite you to watch both videos (please activate the subtitles)[4] and learn more about our work, or get in touch[5].

REFERENCES

Acosta López, M. D. R. (2025). On aesth-ethic activism as epistemic resistance in conversation with José Medina. *Social Epistemology*, 1–14.

Baldwin, J. (1979). Of the sorrow songs: The cross of redemption. *New Edinburgh Review*, 47, 18–22.

Berger, H. M. (2008). Phenomenology and the ethnography of popular music: Ethnomusicology at the juncture of cultural studies and folklore. In G. F. Barz & T. J. Cooley (Eds.), *Shadows in the field: New perspectives for fieldwork in ethnomusicology* (pp. 62–75). Oxford University Press.

4 Cf. trailer (4 mins): https://youtu.be/PevWT_Lkbxo; participatory music video (4 mins): https://youtu.be/OhX_Rkx_sl0

5 visit: https://resonar.net

Borgdorff, H. (2012). *The conflict of the faculties: Perspectives on artistic research and academia*. Leiden University Press.

Bourriaud, N. (2009). *Radicante*. Adriana Hidalgo.

Bourriaud, N. (2020). *Relational aesthetics*. Les Presses du Réel.

Breidlid, A. (2013). *Education, indigenous knowledges, and development in the global South: Contesting knowledges for a sustainable future*. Routledge.

Castoriadis, C. (2016). Radical imagination and the social instituting imaginary. In *Rethinking imagination* (pp. 136–154). Routledge.

Chaparro[6], I. (2024). Radical resonances, social transformations and friendship. In E. Segal, C. Hoff, & J. Cho (Eds.), *An encyclopedia of radical helping* (pp. 380–383). Thick Press.

Chaparro[6], I., & Manzini, E. (2009). *Ezio Manzini and the "social innovation" | Ezio Manzini y la "innovación social"* [Interview] [Video]. Vimeo. https://vimeo.com/7510917

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia* (B. Massumi, Trans.). University of Minnesota Press. (Original work published 1980)

DiSalvo, C. (2015). *Adversarial design*. MIT Press.

Escobar, A. (2001). *Encountering development: The making and unmaking of the third world*. Princeton University Press.

Escobar, A. (2016). Thinking-feeling with the Earth: Territorial struggles and the ontological dimension of the epistemologies of the South. *AIBR. Revista de Antropología Iberoamericana*, 11(1), 11–32.

Escobar, A. (2017). Response: Design for/by [and from] the 'Global South'. *Design Philosophy Papers*, 15(1), 39–49.

Federici, S. (2018). *Re-enchanting the world: Feminism and the politics of the commons*. PM Press.

Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.

Fricker, M., Graham, P. J., Henderson, D., Pedersen, N. J., & Wyatt, J. (Eds.). (2020). *The Routledge handbook of social epistemology*. Routledge.

Garcés, M. (2015). *Filosofía inacabada*. Galaxia Gutenberg.

Gilroy, P. (1993). *The Black Atlantic: Modernity and double consciousness*. Harvard University Press.

Graeber, D. (2014). *Debt: The first 5,000 years* (Updated and expanded ed.). Melville House.

Gudynas, E. (2014). Buen vivir. In *Degrowth* (pp. 201–204). Routledge.

Haiven, M., & Khasnabish, D. A. (2014). *The radical imagination: Social movement research in the age of austerity*. Bloomsbury Publishing.

Hartman, S. (2019). *Wayward lives, beautiful experiments: Intimate histories of riotous Black girls, troublesome women, and queer radicals*. W. W. Norton & Company.

Johnston, R. R. (2008). Of connection and community: Transdisciplinarity and the arts. In *Transdisciplinarity: Theory and practice*.

Mackinlay, E. (2015). Decolonization and applied ethnomusicology. In S. Pettan & J. T.

6 As an artist and author, I often use an alternative spelling of my last name: Txaparro.

Titon (Eds.), *The Oxford handbook of applied ethnomusicology* (pp. 379–397). Oxford University Press.

Manning, J. (2018). Becoming a decolonial feminist ethnographer: Addressing the complexities of positionality and representation. *Management Learning*, 49(3), 311–326.

Medina, J. (2013). *The epistemology of resistance: Gender and racial oppression, epistemic injustice, and the social imagination*. Oxford University Press.

Mignolo, W. (2011a). The collective project modernity/coloniality/decoloniality. *Walter Mignolo 3*.

Mignolo, W. (2011b). *The darker side of Western modernity: Global futures, decolonial options*. Duke University Press.

Murphy, D. (2011). *Full tilt: Ireland to India with a bicycle*. Eland.

Muñoz, J. E. (2019). *Cruising utopia* (10th Anniversary ed.). New York University Press.

Przybylski, L. (2018). Bilingual hip hop from community to classroom and back: A study in decolonial applied ethnomusicology. *Ethnomusicology*, 62(3), 375–402.

Reinsborough, P. (2010). Giant whispers: Narrative power, radical imagination and a future worth fighting for. *Affinities: A Journal of Radical Theory, Culture, and Action*, 4(1), 67–88.

Resonar Lab. (2023, August 15). *Resonance camp · Resonar Lab* [Video]. YouTube. https://youtu.be/h2Kk4Pfo_QM

Resonar Lab. (2025). *Home, what we do at Resonar*. https://resonar.net/eng/ Rivera Cusicanqui, S. (2018). *Un mundo ch'ixi es posible*. Tinta Limón.

Rosa, H. (2019). *Resonance: A sociology of our relationship to the world*. Polity Press.

Roy, J. (2022). Towards decolonial pedagogies of world music. *Ethnomusicology Forum*, 31(1), 50–69. Routledge.

Sanders, E. B. N., & Stappers, P. J. (2021). *Convivial toolbox*. BIS Publishers.

Sardo, S. (2018). Shared research practices on and about music: Toward decolonising colonial ethnomusicology. In *Making music, making society* (p. 217). Chicago.

Schiermer, B., & Rosa, H. (2020). Acceleration and resonance: An interview with Hartmut Rosa. Acta Sociologica, E-Special: Four generations of critical theory in *Acta Sociologica*. https://doi.org/10.1177/0001699320901765

Sommer, D. (2006). *Cultural agency in the Americas*. Duke University Press.

Sommer, D. (2014). *The work of art in the world: Civic agency and public humanities*. Duke University Press.

Suchman, L. A. (2007). *Human-machine reconfigurations: Plans and situated actions*. Cambridge University Press.

Walsh, C. E. (2015). Decolonial pedagogies walking and asking: Notes to Paulo Freire from AbyaYala. *International Journal of Lifelong Education*, 34(1), 9–21.

Walsh, C. E. (2020). Decolonial learnings, askings and musings. *Postcolonial Studies*, 23(4), 604–611.

education,
inclusion
and creative
empowerment

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Bonds in Motion
Performing arts intergenerational family at Raval, Barcelona

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ABSTRACT

Vincles en Moviment (*Bonds in Motion*) is an artistic community-based research project that originated as a community-based residency in performing arts at Drassanes Civic Centre (CCD) (Raval) in October 2022. With the funding support of the Catalonia Culture Department, OSIC (CLT019/22/000216), we could gather a research interdisciplinary team of five members, experts in heritage and artistic community practices, attention to diversity through scenic arts, choreography and psychology, dance, landscape and experimental geographies, acting, dramaturgy and theatre, and audio-visuals studies. Fourteen participants, aged between 16 to 84 years old, who lived or studied in the Raval neighbourhood (Barcelona), joined the residency. Half of them were migrants from Ecuador, Peru, Colombia or Ukraine and national citizens born in other Spanish autonomous communities. During three months, we experimented with interdisciplinary artistic processes, thus contemplating visual and plastic arts, movement, dance, theatre, performance and "site-specific" indoor and outdoor interventions. All the working sessions were recorded, and on January 2023, a video documentary (40') was released in a public premiere at CCD, with a round table public discussion. We have witnessed the long-lasting impact of this artistic project on the community at Raval neighbourhood, with the transformation of the group of participants into the *Vincles* Family, active, self-organising activities after the project was finished. In January 2024, the group challenged two research team members to co-produce a community intergenerational theatre play with them. For five months, we all co-created *Temps al Temps* (*Time to Time*) intergenerational spectacle that premiered in May 2024.

KEYWORDS

Active ageing, Intergenerational dialogue, participative performing arts, embodied knowledge, site-specific explorations

Introduction

Vincles en Moviment (*Bonds in Motion*) is a participative-based research project in performing arts and humanities. Our aim was to work with interdisciplinary artistic experimentation processes, thus contemplating plastic arts, movement, dance, theatre, performance and "site-specific" (contextualized performative experiences) in the public spaces of Ciutat Vella and Montjuïc (Barcelona). From the 22nd of October 2022 until the 14th of January 2023, we could develop an artistic participative residency in performing arts at Drassanes Civic Centre (CCD) (Raval), with the funding support of the Catalonia Culture Department, OSIC (CLT019/22/000216). The researcher - working in the field of heritage studies, embodied landscape and artistic community practices - envisioned an intergenerational participative-based creative laboratory with the collaboration of four other artists-researchers. We gathered expertise in attention to diversity through scenic arts, choreography and psychology (Marta Filella); in dance, landscape and experimental geographies (Jordi Mas); in acting, dramaturgy and theatre direction (Anna Tamayo), and in photography and filmmaking (Pol Planas). Every Saturday morning for three hours over eight weeks, seven older women (ages 63 to 84) from Josep Tarradellas and Josep Trueta Old People's Centres, and seven teenagers (ages 16 to 18) from Milà I Fontanals Highschool and the Performing Arts course, and other teenagers from Raval's Youth Centre, joined our activities. We could gather an intercultural group with participants born in Catalonia and other Spanish autonomous communities, as well as from Ecuador, Peru, Colombia, and Ukraine. The majority of the participants, young and senior, belonged to vulnerable groups. Some had recently arrived through asylum requests, some were refugees, and others were in a situation of poverty, involuntary loneliness and isolation.

During eight sessions, we worked with the concept of "change" to generate an intergenerational reflexive dialogue about the physical changes in our bodies, the transformative changes in the places we inhabit, or the changes in beliefs, identifications and mental states. Participants could also experiment with memories of the physical transformations in the city of Barcelona, with the changes in the nature of their movements in space, or with the emotional "secure environmental spaces" that bring them comfort in times of emotional changes.

The participants played an active role in the artistic creation and research processes, as well as in the ongoing participatory evaluation processes, both throughout the residency and in the final concluding part, with the colloquium and public presentation. On January 14, 2023, in the Auditorium of the CCD, as part of the Performing Arts Residency Cycle program, we presented the premiere screening of our documentary film *Bonds in Motion* (40') with the results of our three months of community

artistic work, and a subsequent public colloquium and a round table with all the participants and artists, with an attendance of 60 people[1].

This project had a long-lasting impact on the participants with the *Vincles* group, very active, self-organising activities in Raval's neighbourhood after the research project finished. In January 2024, the group challenged the researcher and Anna Tamayo to co-produce a community intergenerational theatre play with them. For five months, and with eight members of the group (six retired women and two young adults), we co-created *Temps al Temps* (*Time to Time)* theatre play that premiered in May 2024, self-financed by the *Vincles* group, and with the collaboration of the CCD, which offered us their facilities, and the theatre space. In March of the same year, we already had the dramaturgic structure of the scenes, the sound and light design, the script was read and commented, and the play's transitions were discussed. Therefore, we were ready for the general rehearsals. Our big day was May 3rd, 2024, with the *Time to Time* theatre play premiere. Some months later, on September 14th 2024, we presented the documentary film premiere "Temps al Temps: Fer possible l'impossible" (Time to Time: making the impossible possible) (45')[2], followed by a public round table discussion with the presence of *Vincles* group, and the artistic team. This documentary film delves into the performance co-creation processes and the close-up of an intimate dramaturgical work. With this film, we wished to bring the viewer to a behind-the-scenes space of dramaturgical participative construction.

Performing arts and environmental adaptation to urban changes

Bonds in Motion (CLT019/22/000216) is a participative-based research project that reflects on the critical context of urban social isolation, especially felt in teenagers and older population in big global cities, experimenting with the making of creative "bonds" with the urban landscape in its socio-cultural, mental-emotional, bodily and environmental dimensions, and how these multiplicity of creative "bondings" dialogue with the processes of "change" that occur within the participants bodies, the urban places they inhabit, and the urban communities they live with. In 2022-23, with residents of Raval's neighbourhood, we delved into a journey to discover their affective bonds "body-place-community" that allow them to adapt to the "changes" of their close environment. We also wanted to highlight the multiplicity

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1 Documentary Research Project *Bonds in Motion* (*Vincles en Moviment)* (2023) (42'), Youtube@vinclesenmoviment, (https://youtu.be/8kgiT77iguQ?si=zs2d-F1gu5RsDzzE).

2 Video documentary *Temps al Temps: making the impossible possible* (2024) (45'), Youtube@vinclesenmoviment, (https://youtu.be/YVa4sfmuCIA?si=zqDVaCTh7oZipbzh).

of individual interpretations and voices that speak of an emotional connection with the urban landscape. In this project, we interpreted this connection through bodily experiences, movement and site-specific performativity in the public spaces of Ciutat Vella, Barcelona.

This project implied artistic-based research in the field of performing arts, combining applied and empirical research within humanities studies, and specifically studies on the urban landscape, crossing areas of knowledge that include the observation of the phenomenological aspects of the perception of space and the integration of the artistic disciplines within the performing arts (performance, movement and "site-specific" contextual dance), making use, on occasions, of other artistic practices such as plastic and audio-visual arts. We aimed to generate a transdisciplinary and artistic community-based research work with the collaboration of invited artists and with the essential participation of an intergenerational group of residents. They all played an active role in the processes of experimentation and artistic documentation through participative artistic methodologies, allowing us to build processes of environmental adaptability and social resilience independently of their age difference.

Our methodology was inspired by "site-specific" contextual practices within theatre, performance and dance, with interventions that allowed us to establish new experimental dialogues about the embodied experience and the transformation of urban spaces. As a reference in urban studies, we must mention the drift of Baudelaire's flâneur who, in walking aimlessly, finds refuge in the anonymity of the crowd (Benjamin, 1939/2005), the psychogeographical experiences of the urban explorations of the Situationists where play and ephemeral performative interventions transform urban spaces into transitory scenarios of reflection and subjective freedom (Debord, 1955). Additionally, the happenings of the 1960s, challenged the conventions of theatrical performance, blurring the line between art and the seemingly casual, everyday actions in public spaces (Kaprow, 2003). Other references can be found in the itinerant theatre, or the performative itineraries that have blurred the role of the actor and the spectator, where the development of dramaturgical narratives and performative actions simultaneously dialogue with both of them and whith the urban places (Harvie, 2009). The act of walking is an aesthetic practice because it transforms a place and its meanings through the variations of perceptions that take place in the movement (Careri, 2002). In *Bonds in Motion* we aimed to rediscover the urban landscape of our everyday life in two different ways: as actors who transform, in an ecological and phenomenological sense, the environment, giving meaning to the urban space with our actions, interpretations through play and the performative event, and as spectators who reflect on the meanings of our actions, and who restore a relationship of intimacy and emotional and artistic sensitivity with the urban landscape, through the rediscovery of our bodies within these scenic spaces (Turri, 1998). Within

our work, we also highlighted the multiplicity of interpretations and voices that speak of an environmental and emotional connection with the landscape, articulating the social, mental and environmental ecology of urban places (Guattari, 1989). We challenged ourselves to creatively shape and interpret this connection through our bodies, movement and performativity. Our actions, gestures, sensations, affective responses and bodily and performative behaviours build an intangible heritage (Thrift, 2008). The body is our tool to experience, feel, express, communicate and represent the "bonds" that unite us to the ecology of the world. The body is the threshold that connects the universe of our unconscious, of an inner, mental, emotional and subjective world, with the objective, complex and multisensory externality of the physical reality of the spaces that surround us.

Intergenerational and multicultural performing arts research

Our participants (teenagers and older retired women) experienced processes of vital "change" in a particularly palpable way. In this research, we have given them space and time to share, express, and channel these processes through the language of the arts. Even though in October 2022, the period of the Covid-19 pandemic was already distant, both groups had suffered and still were suffering situations of psychosocial and environmental involuntary isolation. Our challenge was to observe and give them tools to express themselves and create new emotional "bonds" that could help them to adapt to physical and emotional "changes" in their close environments. In this section, we will show some of the topics and exercises we elaborated on the project's first stage (2022-23).

In the session *Atentions*, we gave us time to listen to each other, observe the city and create based on that observation. It was about observing the city while observing and listening to each other, and becoming aware of the differences in everyone's observation of urban places. This outdoor session consisted of a performative itinerance or urban drift through "treasure places" chosen by the participants (Rambla del Raval, Jardins de Rubió i Lluch, and Moll de la Fusta). In this site-specific "performance", carried out in groups of three people, they observed, selected and drew what caught their attention in the urban spaces they passed through. This performance involves carrying and holding a large golden wooden frame painting while simultaneously drawing on a transparent methacrylate screen, capturing both what is in front and behind them. In this process, participants become aware of the differences in how they perceive their surroundings. As their perspectives intersect, their bodies become an integral part of the places they observe (Figure 1). In this session, walking involves "giving us time" to observe the space, listen to each other, share

stories and anecdotes about those places, and create a new collective narrative of the shared lived moment.

Session *Secure Space* was developed indoors and outdoors, ending with a performative site action in Voltes de Cirés gardens (Raval). In this session, we worked on the concept of a safe place and the associated personal memories that last despite the passage of time, which grow and are enriched in dialogue with the other (Figure 2). We started an indoor exercise through group sedimentation and dressing our bodies with the words, details and feelings of "places". Later, we established an intimate dialogue in pairs about what a "refuge space" is for each of us and which type of feeling of well-being provides us. This intimate "safe and secure space" -a different place for each of us- endures as a body memory. We return to it repeatedly, whether in our imagination or through an actual journey with our physical presence, whenever we are able to. This safe space gives us security and stability throughout personal processes of change. We went out into the street dressed as "secure spaces" and searched for a public space to hang out our clothes. In this action, we created an ephemeral "secure space" common to all of us, surrounded by all our differences and symbolic clothes.

Temps al Temps

A community intergenerational theatre play

Temps al Temps (*Time to Time*) is a theatre performance of the *Bonds in Motion* group. For eleven weeks (January-March 2024), we delved into artistic research and co-creation processes with an intergenerational group of eight members (18 to 86 years old) to create an original scenic piece with a public premiere at CCD, Barcelona. *Temps al Temps* experiments with the concept of "time", which holds our hopes and fears, and allows us to savour, mature and grow, feel and trust, love, and leave behind trances and a thousand doubts. The working sessions allowed us to listen to the "passing of time", to understand what it means when we "need time", or we "stop time", or "lose time", or trust in a "time" that brings everything in its proper place, or excuse ourselves behind "the lack of time" that is always running and leaving us behind. This section presents some of the topics and exercises we elaborated on *Temps al Temps* dramaturgic co-creative process (2024).

In the session *We need time*, we worked on the concept that time has a certain elasticity. It stretches to infinity when we are delicate and move slowly, for example, when we savour and carefully observe every sensation that crosses our skin and senses in a pleasure situation. However, time contracts and escapes from our hands when we are in a hurry or in a chaotic situation. In this session, images were created for the "Chocolate

Figure 1 – Session – *Atentions*, a performative walk in Ciutat Vella; Barcelona (Pol Planas, 2022).

Figure 2 – Session – *Secure Space*, creating an intimate place in Raval (Pol Planas, 2022).

Cake" scene (Figure 3). In this scene, everyone stands around a table and starts taking aprons, chalk pencils and timers out of a box. They come together to prepare a cake, but this objective requires a cooking time preparation. Only one of them knows the recipe, and the rest follow the instructions, observing how the leader draws energetic arrows and drawings on the table. Suddenly, chaos appears, with confusing situations, timers randomly ringing, and cooking processes being mixed up. Indeed, what came to be a quiet, calm experience in a friendship environment becomes a stressful experience of demanding time frames. The tension ends in random playfulness where everybody transforms the scene into an "atemporal" childhood playground of "run, I'll catch you". The group, with chocolate and cream on their faces and hands, go back in time when they were children (independently of age differences), and

Figure 3 – Rehearsal of the Chocolate Cake Scene at Drassanes Civic Centre (Pol Planas, 2024).

Figure 4 – *Time to Time*, Premiere in Drassanes Civic Center, May 2024 (Pol Planas, 2024).

it was possible to "lose time" and even stop it within the game.

In the session Time Transforms Us (italics), we explored the concept that "time" has the power to make the invisible visible, bury the most resistant and solid beneath the sand, or melt the ice to reveal what was frozen. Through persistence and obstinacy, constancy and patience, habit and automatism, or the act of carrying a burden over "time", we inevitably change and become someone else. The older women agreed there was a decisive moment in their lives when they took a train to come to Barcelona. A train they had the choice to either take it or not, but it transformed the course of the rest of their lives. We asked them to bring from home those clothes they had saved from the past, and for some hidden reason, they never got rid of them. We asked them to mix them in the group and to dress them randomly. Each of these clothes

carries meaningful and deep memories, and dressing in those clothes transforms them into powerful women with superpowers. We ask them to describe that superpower and share it with the audience (Figure 4).

Conclusions

In *Bonds in Motion* (2022-23), we have created a dialogue between the participants and their close urban environment. The urban landscape has been another actor in the performative activities. Simultaneously, the participants played the role of actors and spectators in each of these spaces in the city. They have been able to transform these environments through their actions, reflected on them, given them a new meaning, and discovered the relevant role of their performative body within the landscape, transformed into a scenic space. Once the project ended, we maintained contact with the group, and the CCD offered us the opportunity to continue using its spaces for our quarterly meetings. In the project's second stage, we accepted the challenge of the group to develop a theatrical creation ending in *Time to Time* premiere spectacle (2024).

In this project, a dynamic of intimate familiarity has reminded us of the tender intergenerational relationships that can be generated. It was possible because of the open attitude of the participants, who allowed themselves to express and receive the challenges presented in the activities with open arms. This openness and willingness have also been evident in gatherings and moments of uninhibited sharing, creating an environment where, despite the age differences, there has been a climate with no judgment, fear, and shame. We have verified how art and artistic activities directed by respect and collaboration provide psychological well-being in all the participants. We have shared delicate and intimate life experiences. Art makes it easier to reflect and share them and gives them space to be expressed. In this sense, the artistic practice is a delicate means to reach sensitive topics and deep emotions, creating a sense of respectful collective compromise.

In the final evaluation, the participants also highlighted the spirit of collaboration of the whole group to generate and develop the activities in an atmosphere of fun and smiles. They explained that they encountered no age or, cultural or language obstacles (they could speak Catalan, Spanish and English naturally). They also discussed how we broke age stereotypes and the taboo of ageing. From the outside, stages of life are artificially created with supposed limits, aspirations and built-in needs. Stereotypes between young and older people also foster oppositions and relationships of supposed respect. In this artistic work, we have worked on respect from a different place. Mutual respect is where we give each other space to listen and feel heard and where we are all considered. With this artistic work, we have broken these stereotypes and these socially

imposed limits. We wanted to work from a place of authenticity and the desire to enjoy the experience where there are no age differences beyond physical differences or life experiences, but where the desire to do things and the illusions of all have been equally alive and shared.

REFERENCES

Careri, F. (2002). *Walkscapes: El andar como práctica estética.* Gustavo Gili.

Benjamin, W., (2005). *Libro de los Pasajes.* Akal. (Original work published in 1939)

Bergson, H. (2005). *Matter and Memory* (N.M Paul & W. Scott Palmer, Trans.). Zone Books. (Original work published in 1896).

Debord, G. (1996). Introducción a una crítica de la geografía humana. In L. Andreoti & X. Costa (Eds.), *Teoría de la deriva y otros textos situacionistas sobre la ciudad* (pp. 18-19). Actar. (Original work published in 1996).

Guattari, F. (2000). *The three ecologies.* Athlone Press. (Original work published in 1989).

Harvie, J. (2009). *Theatre and the city.* Palgrave Macmillan.

Kaprow, A. (2003). *Essays on the blurring of art and life* (J. Kelley, Ed.). U of California Press.

Thrift, N.J. (2008). *Non-representational Theory: Space, Politics and Affect.* Routledge.

Turri, E. (1998). *Il Paesaggio come Teatro. Dal território vissuto al território rappresentato.* [The Landscape as Theatre. From the lived territory to the represented territory]. Ed. Marsilio.

Students photograph, seagulls fly

A comparison between "Jonathan Livingston Seagull" and photography used as a pedagogical design research methodology in the Cri_Lab workshop

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ABSTRACT

As part of *Cri_Lab*, an experimental workshop at Marquês de Pombal Secondary School in Lisbon, students (aged from 15 to 19) participated in ten weekly sessions exploring art production as a research methodology. The objective of the project was to cultivate awareness of space, territory and architecture, through artistic and cultural connections, contributing to an informed practice of citizenship. This paper will focus on two photography sessions, where students photographed and developed their own work as a way of critically analysing the school space. The paper examines transdisciplinary art and design approaches in education, revisiting the produced work by analogy to *Jonathan Livingston Seagull* by Richard Bach (1936). This book combines textual and photographic elements in order to explore themes such as education, freedom and identity. These themes are of particular significance within the context of creative practices in learning. The paper will first introduce the *Cri_Lab* project and photography as an art-based research method with potential connections to art, design and space education. The subsequent discussion will entail a detailed comparison and analysis of the two photography sessions' planning and implementation, culminating in a presentation of the ensuing results and outputs. Finally, the discussion will conclude with an examination of the results through the lenses of the ideas presented in *Jonathan Livingston Seagull*. The sessions encouraged interaction with the environment, using photography as a tool for critical analysis. In the challenging socio-economic context of the school, artistic practices fostered dialogue, inclusion, and engagement, emphasizing the role of creative narratives in critical thinking and identity formation.

KEYWORDS

Art education, photography, art-based research, visual essay, jonathan livingston seagull

Introduction

That year, the roofs of the school were full of birds. A few sparrows, some swallows and a lot of seagulls. One could see that they were enjoying the location, next to the Tagus River (Tejo), flying to and from the school, through the Belém fog.

In spring, families grew. One day, a brave baby seagull took a leap of faith, jumping from the roof to the patio. It did not end well. Another one followed, but this time, showing some empirical knowledge, maybe informed by the experience of its fellow bird, the gull made its way safely to the ground.

One morning, a group of teachers watched outside and asked - why would someone, who had food and a roof, jump? They noticed the bird kept trying to learn to fly. He should have a name - someone said – after all, he is stuck in school, trying to learn, he may be a student. Teacher Hélder turned to me and suggested – he should be called *Jonathan Livingston Seagull*, have you read it? No, I have not. Well, you should - and off I went to *Cri_Lab*.

Cri_lab was a project developed at the Marquês de Pombal Secondary School (ESMP) in Lisbon, consisting of 10 weekly sessions on the theme of space in general, but also focusing on the school grounds and building. The participants were secondary school students, the researcher in charge (Henrique Andrade), who at the time was also a teacher at the school, and some invited specialists. Each session used a visual arts methodology to produce critical readings of space, seeking collaboration and discussion through artistic expression.

This article provides a comprehensive analysis of two sessions, tutored by an invited photographer and researcher (Joana Nunes), which used photography as the primary research method. Nine and twelve students participated in the first and second sessions, respectively. To achieve this aim, a detailed description of these sessions will be provided. Subsequently, an analysis of these sessions will be written in the light of the research themes, teaching arts and pedagogy, education for space and citizenship and photography as a method of artistic research in the teaching of visual arts. This will be accompanied by a comparative analysis of the book *Jonathan Livingston Seagull* (JLS), by Richard Bach.

ESMP is an institution located in Belém, Lisbon, particularly in the Portuguese professional secondary education sector. During the *Cri_Lab*, a significant proportion of the student body experienced some form of socio-economic disadvantage, making it all the more important to carry out educational art-based projects.

The present article will be structured through a comparison with the book and the exercise carried out during two sessions of *Cri_Lab* dedicated to photography. This parallelism is intended to facilitate the

Figure 1 – *Jonathan Livingston* stayed on that patio until summer, studying to fly among the students (photo by the author, 2024).
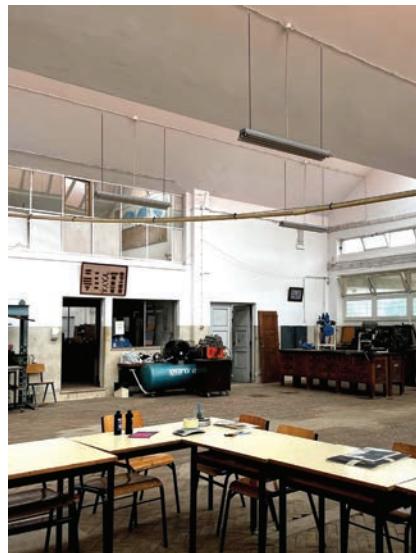
Figure 2 – Venue and materials prepared for the second photography session (photo by Joana Nunes, 2024).

Figures 3 and 4 – Negatives of photos taken by students (2024).
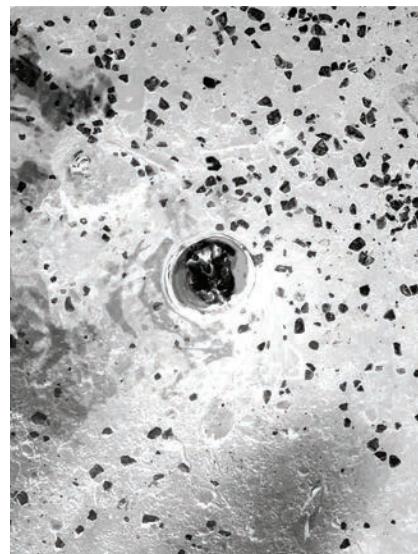
communication of the methodology used, by identifying themes in the experiment that are relevant to artistic research and teaching in the visual arts. The result is the development of a humanistic perspective, achieved by highlighting the advantages and possibilities inherent to this type of process. The following themes will be used to provide a comprehensive

description and critical analysis of the process: art, identity and pedagogy; space, emancipation and citizenship; photography as a method of artistic research.

The book can be seen as both a reflective piece of literary work and an exemplary artistic creation (a kind of artbook) in its own right, featuring a series of photographic works. This study does not seek to evaluate or advocate for its artistic merits; but rather to explore the potential of using a comparative approach as a qualitative art-based methodology to critically interpret the two sessions. The aim, therefore, is to employ an art-based research methodology to create a dissemination channel for the scientific knowledge produced, in line with the process to be described itself.

Session diary

Both sessions, which focused on the theme of photography as a way of analysing and reading space, were tutored by the authors.

The first session began with a short presentation inviting students to look at photography as a way of representing architecture, space, city and territory. As well as thinking about this possibility of representation as an opportunity to critically read and analyse space. In short, to record space, think about it and discuss it. These ideas were illustrated by the authors work and first-person descriptions of how they applied them to their own work. The same presentation made it possible to deconstruct the idea of photography as a necessarily technical method, drawing attention to its experimental possibilities. The lecture concluded with a practical introduction to the cyanotype developing technique.

Discovered by John Herschel (1792-1871) in 1842, cyanotype is one of the earliest photographic processes. It is distinguished by its characteristic blue tonality, which is the result of a chemical reaction between potassium ferricyanide and ammonium ferric citrate. It was extensively explored by Anna Atkins (1799-1871), who applied it to the field of botanical documentation, thereby producing one of the first illustrated books composed entirely of photographic images.

Beyond its scientific applications, cyanotype played a crucial role in the reproduction of technical and architectural documents, establishing itself as one of the principal reprographic methods of the pre-digital era - the "blueprint" (Ware, 2020).

The cyanotype process involves coating a substrate – usually paper or fabric – with the photosensitive solution, followed by exposure to ultraviolet radiation in contact with a negative. The latent image is then developed by washing in water.

After the presentation, the parameters for the practical exercise were set. Students were invited to use their mobile phones, since phone cameras were widely available among them. The premise of the exercise was to take a leisurely stroll around the school grounds and notice any details that they felt had been forgotten, that were worth highlighting for positive or negative reasons, or that could in some way contribute to representing what the school space meant to them. The room where the exercise began became a base where the students returned from their tour, from time to time, to discuss with the authors the images they had collected. On their own initiative, the students formed groups of up to three people, and during the walk they discussed space and ways of recording it, between them. After 50 minutes and many conversations and discussions that arose during the exercise, the whole group returned to the room.

The last 20 minutes were used for discussion among the whole group and to look at the photographs that had just been taken, with the aim of selecting a maximum of two photos per student. When this objective was achieved, the session ended.

Between sessions, materials were prepared for developing the photographs. Acetate negatives were printed from the selected photographs and the remaining preparation took place in the session itself. More than 20 prints were made from photographs taken by the group. The process led to moments of discussion and sharing the obtained results. The variability of possible outcomes in this type of development sparked an interesting critical sense among the students towards the image produced. Sometimes, students expressed the desire to repeat the process with a different exposure time in order to achieve a different colour contrast that would be more in line with their intention for the image. Each student had to prepare the paper, mount the negative with the paper, time the exposure and wash the print.

Metodology

As a visual tool, photography not only documents, but also reinterprets and reconfigures the perception of places. In this context, it was used as a means of stimulating students' spatial awareness and their interaction with the school environment, acting as both a medium of expression and a tool for reflection.

Cri_Lab's methodology was inspired by Photovoice, an approach that uses photography as a means of empowerment and representation (Langmann & Pick, 2018), particularly in the context of social marginalisation. Photovoice, as developed by Wang and Burris, (1994, 1997), is a participatory method that allows participants to document their realities and articulate their perspectives on the environments in which they live.

However, the adaptation of this methodology in *Cri_Lab* was primarily aimed at expanding the participants' visual communication through photography, shifting the focus of Photovoice from a purely documentary analysis to a more open and subjective exercise in spatial and aesthetic exploration. Thus, the photographic process was not intended to simply capture images, but to foster a more sensitive and critical engagement with the surrounding space. The sessions were structured to encourage a keen observation of everyday life and to stimulate spontaneous discussions about the spatial and architectural experience of the school building.

One of the most significant adaptations to the original method was the inclusion of spontaneous discussion sessions in which participants shared and analysed their images collectively, fostering an environment of exchange and dialogue. This format increased student engagement and ensured that photographic practice served as a means of self-discovery and expression, rather than simply a process of image creation.

In the first session, students were encouraged to photograph elements of the school environment that were often overlooked, marginalised, or invisible. This process initiated a reinterpretation of their everyday reality. Photographic practice emerged as a medium of inquiry, that challenged common perceptions of the school and encouraged a renewed engagement with space.

The choice of cyanotype as a photographic development technique allowed for an experimental approach to image making. As one of the earliest photographic processes, cyanotype introduced a manual and sensory dimension to the practice, reconnecting students with the fundamental principles of the photographic process, such as the role of light in image formation. Its chemical stability, technical simplicity and reduced cost were also considered factors.

Beyond its historical and technical significance, cyanotype has been incorporated into the *Cri_Lab* activity as a pedagogical tool that encourages experimentation and conscious aesthetic choices. The process of sensitising paper to light, and developing images, is a performative and experimental practice that allows students to engage directly and physically with the creation of images. This approach emphasises the value of error and chance as integral components of the learning process.

Students fly, seagulls photograph

The comparison with JLS was inspired by two coincidences: the coexistence of humans and seagulls in the schoolyard and the teacher who happened to recommend the book during *Cri_Lab*. JLS tells the story of a seagull who dares to dedicate his life to flying just for the sake

of flying, a decision that leads to his expulsion from the flock of seagulls to which he used to belong.

> "Why, Jon, why?" his mother asked. "Why is it so hard to be like the rest of the flock, Jon? Why can't you leave low flying to the pelicans, the albatross?"
>
> (Bach, 1970, p. 14)

The protagonist's ability to cope with his outcast status stems from his unwavering commitment to his passion, which he pursues with relentless perfection and devotion. He acts as a mentor to young seagulls facing similar circumstances, advocating the use of compassion, forgiveness and understanding, while emphasising commitment to truth and fervour in the pursuit of one's aspirations (Bhattacharya, 2019).

The fundamental premise of this text is that the symbolism inherent in Bach's narrative can be used to establish an analogy that demonstrates how the participants are encouraged to question their surroundings through the medium of photography. This approach is analogous to JLS's approach of challenging his own reality by transcending limitations and perfecting his flight. The participants in this study comprised researchers, students and teachers who collaborated in the activity. In the context of this analogy, the title of this text could be inverted to 'Students Fly, Seagulls Photograph', on the premise that during the sessions, everyone could be a student, everyone could take photographs, and everyone could fly. It is also noteworthy that JLS constitutes a photobook, profusely illustrated with photographs by Russell Munson, in which the reader can engage with both text and photography. The following exercise involves reinterpretation of the teachings of JLS in the context of the photographs taken during the sessions, with the aim of elucidating the essence of the experience and the potential identified in this essay.

It should be noted that, from this paragraph onwards, the term flock may be used to refer to a group of students, seagull to a student, flight to photography, and student to a bird capable of flying.

Photograhy as a way to draw/ design space

The aim of *Cri_Lab* is to investigate the potential of artistic methodologies to redefine the meaning and approach in the context of participation in architecture. The effectiveness of this objective is evaluated through the implementation of an experimental laboratory with weekly sessions (Andrade, in press), including the two photography sessions mentioned above. The outputs of the project are expected to include the development of spatial design or artistic interventions, and the validation of other indirect contributions to space, such as the promotion of spatial agency (Awan et al., 2011), through the dissemination of art and

space-based knowledge to relevant agents. The sessions are articulated according to a positioning in relation to drawing, which determines that, when understood in a broad sense, this is a generative activity, which is closer to the term design. Consequently, painting, writing and even photography can all be conceptualised as forms of drawing (Andrade, 2024). Furthermore, the exploratory nature of these methodologies is pertinent in determining that photography should be used as a method of critical thinking prior to its use as a method of recording or documenting images.

> He had some crazy ideas that they couldn't understand, but then he had some good ones that they could.
>
> (Bach, 1970, p. 82)

All the sessions started in the same way. Some of the students' facial expressions look moderately curious, bored or with a look of total disregard for the information given at the beginning. No point in trying to interpret faces. The best way of action was always action itself. Conversation worked sometimes but was never as effective as action to create discussion. In other words, conversation happened anyway, it was just the language that was different. And in this case, we tried to speak photography.

Images came before words. Every seagull understood how to use photography, even more so how to use their mobile phones. What we discovered was that everyone knew their school space in their own way, so everyone could speak about it and through photography they did it, more promptly than through words.

Through flight, materialities could be closer or further away. Some began to look like drawings.

Photography, art education

To be critical

Some of the seagulls started to ask questions, is my way to school part of the school space?

As the flock continued to take photographs, conversation started to happen again, but now we could use words and images, both to talk about space. Each bird was entitled to its own voice, its own view, but through art the group began to discuss, and through discussion we began to be critical.

The creative act enabled the group to engage in a discussion about space as a mutable entity, endowed with qualities and defects that could be exposed through photography, thus facilitating a form of critical pedagogy (Salama, 2021). Through this pedagogical approach
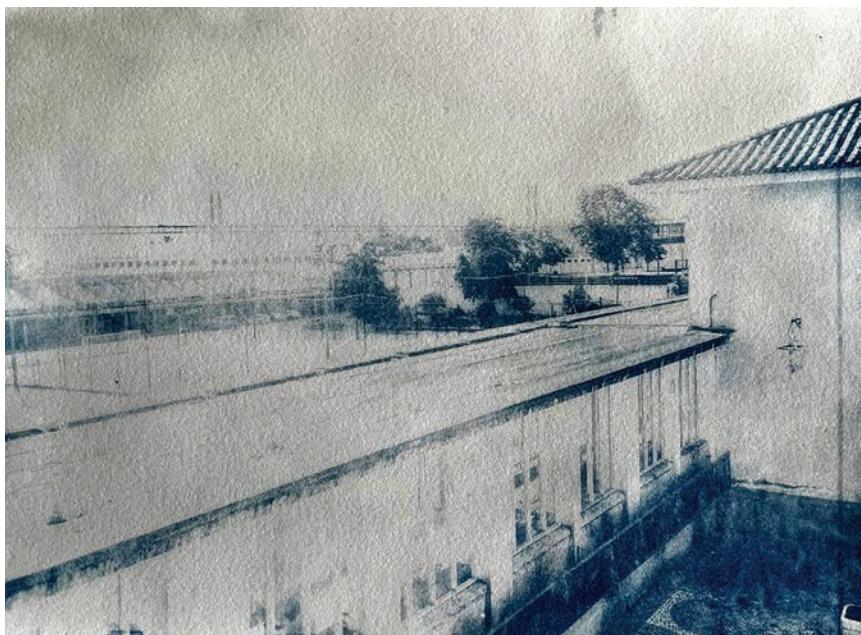
Figure 5 – Cyanotype print, by students (2024).
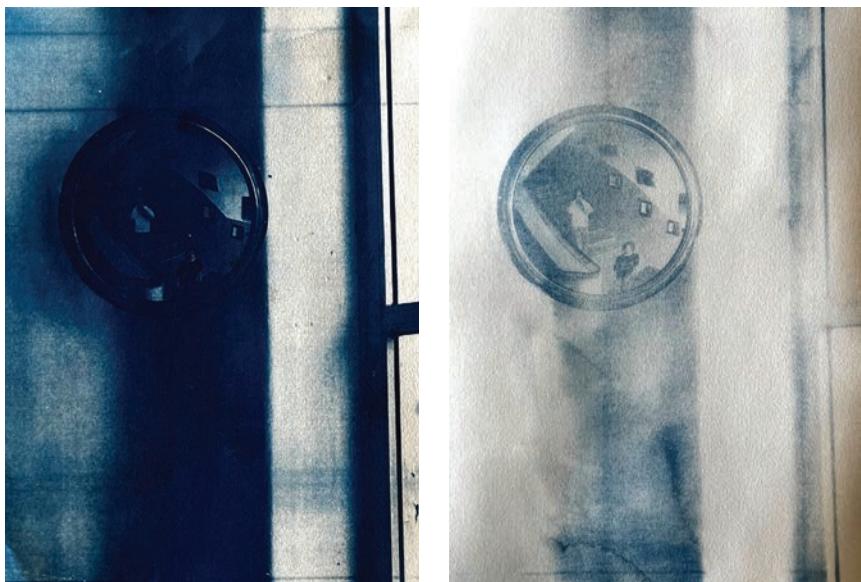
Figures 6 and 7 – Cyanotype prints (2024).

students take an active role in the acquisition of knowledge. All members of the group, including teachers and researchers, shared an equal level of authority in the experiment. Everyone was part of the flock, thereby facilitating a collaborative and inclusive learning environment.

> "You're wasting your time with me, Jonathan! I'm too dumb! I'm too stupid! I try and try, but I'll never get it!"
>
> (Bach, 1970, p. 75)

The seagulls either had to wait or race against the clouds, which sometimes limited light and therefore the time needed to develop the photographs. With trial and error came some frustration. But then we would have two different images to choose. Some seagulls found that sometimes mistakes become surprises.

Photography, education and emancipation

> Ignore them. The gull who speaks to an Outcast is himself Outcast. The gull who looks upon an Outcast breaks the Law of the Flock.
>
> (Bach, 1970, p. 78)

During the sessions, seagulls became part of a flock. Photography allowed dialogue to take place despite the existence of different points of view. Art-based education holds the potential to embrace issues of inequality (Amrita & Aaron, 2022).

> "Why is it," Jonathan puzzled, "that the hardest thing in the world is to convince a bird that he is free (...)"
>
> (Bach, 1970, p. 90)

Spatial literacy is a determining factor in the practice of citizenship. Therefore, spatial education has the potential to emancipate spatial users, particularly in environments of socio-economic fragility, enhancing the effectiveness of spatial production through collaboration (Távora, 1962).

Some seagulls photographed the space as an extension of themselves, to the point of photographing their own reflections in the places depicted.

In the end, for every single bird in the flock, space was something to perceive and idealize. Something that interacted with their own existence. Something that they were free to transform through collaboration.

> "Each of us is in (...) an unlimited idea of freedom," Jonathan would say in the evenings on the beach, "and precision flying is a step toward expressing our real nature. Everything that limits us we must put aside. That's why all this high-speed practice, and lowspeed, and aerobatics..."
>
> (Bach, 1970, p. 76)

Assembling banality, art and education

The notion of utilising educational projects within the context of institutional learning possesses the potential to broaden the scope of learning and to enable students to assume an active role in their education. Furthermore, artistic education projects offer a rich ground for research in both the arts and social sciences, while fostering a more democratic dissemination of knowledge and access to culture.

An educational process that fosters such practices can contribute to the development of peaceful dialogue environments and the cultivation of a critical gaze on the world in which we stand, and in which students will, one day, stand as adults. This critical stance on space, for instance, is fundamental to promote agency in the actors of the social and physical space of the city.

In a world that is increasingly specialised and technical, the question of the role of informality, and even banality, in the learning process becomes increasingly pertinent. The arts, in particular, are one domain where the potential for blurring disciplinary boundaries and fostering interdisciplinary and transdisciplinary practices is significant. This issue is exemplified in works such as *Jonathan Livingston Seagull*, which demonstrate that the mundane can act as a catalyst for creativity and introspection. Even seemingly mundane activities such as birdwatching or casual conversation in a school courtyard, which might appear inconsequential in the context of the rapid advancements in technology, can serve as catalysts for dialogue, significance, or artistic expression. This artistic stance can be employed in both analogical and technological creation processes. The integration of creativity and art within educational paradigms can serve as a conduit for navigating the complexities of the contemporary world. By employing a methodical and interrogative approach, this integration can facilitate the development of more humane and adequate solutions.

REFERENCES

Amrita, D., & Aaron, G. (2022). Envisioning art and design education through the lens of diversity, equity, and inclusion. In G. Bruyns & H. Wei (Eds.), *With design: Reinventing design modes* (pp. 197–215). Springer.

Andrade, H. (2024). Drawing research: Creative approaches to architectural research. In Guerra, P. & Sousa, S. (Org.). *Todas as artes* (vol. 3). (pp. 228-243). Universidade do Porto, Faculdade de Letras.

Andrade, H. (in press). Critical spatial practice in the context of art education: The Cri_Lab sessions conducted at Marquês de Pombal School, in Lisbon. In Guerra, P. & Sousa, S. (Org.). *Todas as artes* (vol. 4). Universidade do Porto, Faculdade de Letras.

Awan, N., Schneider, T., & Till, J. (2011). *Spatial agency: Other ways of doing architecture*. Routledge.

Bach, R. (1970). *Jonathan Livingston Seagull: A story*. Scribner.

Bhattacharya, S. (2019). Quest of 'I' with special reference to Richard Bach´s Jonathan Livingston Seagull. *International Journal of Linguistics and Literature (IJLL)*, 37–44.

Langmann, S., & Pick, D. (2018). Photography as a social research method. Springer.

Salama, A. M. (2021). *Transformative pedagogy in architecture and urbanism* (1.st ed.). Routledge. https://doi.org/10.4324/9781003140047

Távora, F. (1962). *Da organização do espaço* (9th ed.). FAUP publicações.

Wang, C., & Burris, M. A. (1994). Empowerment through photo novella: Portraits of participation. *Health Education Quarterly*, 21(2), 171–186. https://doi.org/10.1177/109019819402100204

Wang, C., & Burris, M. A. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. *Health Education & Behavior*, 24(3), 369–387. https://doi.org/10.1177/109019819702400309

Ware, M. (2020). *Cyanomicon – history, science and art of cyanotype: photographic printing in prussian blue*.

Printing with natural inks

Embracing eco-friendly analogue practices in design education

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ABSTRACT

The graphic design industry faces significant challenges due to its reliance on resource-intensive and environmentally harmful practices. As demand for sustainable methods grows, adopting eco-friendly alternatives to synthetic materials and reimagining long-established processes becomes essential. Natural inks, derived from biological or mineral pigments and dyes, offer a promising solution to reduce the environmental impact of traditional printing techniques. This work explores the production and application of natural inks in screen printing, aiming to balance sustainability with functionality without compromising creativity. Two primary questions guide this research: (1) Can natural inks perform effectively in screen printing while maintaining adequate colour quality and consistency? (2) Can the use of natural inks in educational contexts promote awareness and adoption of sustainable practices? Key challenges include achieving consistent extraction of natural colourants, optimising ink performance, and assessing their practicality in real-world applications. Focusing on plant-based natural inks, hands-on workshops were conducted in an academic setting to engage participants in the preparation and application of these inks, reintroduce analogue printing methods, and encourage collaborative exploration. Preliminary results indicate that natural inks hold promising potential in contemporary graphic design and fine arts, despite challenges in achieving consistent colour intensity and log-term stability. Workshop participants produced functional, visually appealing prints while significantly reducing toxic waste and resource consumption compared to conventional methods. Through experiential learning, participants gained insights into the ecological implications of their creative practices and were motivated to prioritise sustainability in future work. This study highlights the critical role of design education in promoting sustainability and its potential to inspire broader industry changes.

KEYWORDS

Biodesign, natural inks, sustainability, graphic design education, screen printing

Introduction

Since the Industrial Revolution in the 19th century, the graphic design industry has faced challenges concerning resource consumption and pollution. These challenges stem from its reliance on resource-intensive practices that negatively impact the environment, particularly the use of materials and processes associated with high carbon emissions, large amounts of waste, and harmful chemicals.

However, in recent years, there has been a growing call for more sustainable solutions. One such emerging approach is the use of plant-based pigments and dyes in ink production, which stands out as an innovative and sustainable practice. By reviving ancestral techniques, this approach also leads to new reflections on environmental impact and the value of natural materials.

Following the path of graphic design and designers as transformative agents in a society seeking solutions to the environmental crisis, this article explores the application of natural inks in graphic design through the screen printing process. It places special emphasis on its relevance within academic settings, particularly in design courses, where more conscious practices can contribute to the education of professionals committed to sustainability.

The Industrial Revolution and environmental degradation

The Industrial Revolution, which began in the late 18th century and extended into the 19th, marked a turning point in human history, radically transforming society, the economy, and the environment. However, technological progress and increased production also led to growing environmental problems. The global environmental changes currently threatening the sustainability of the biosphere can be traced back to the Industrial Revolution (Santos, 2020).

The excessive use of coal in emerging industries released vast amounts of carbon dioxide, nitrogen oxides, and sulphur dioxide into the atmosphere. Likewise, many industrial wastes containing toxic chemicals were discharged directly into waterways. A large-scale consumer society emerged from the rise in mass production, significantly increasing demand for natural resources, often without concern for regeneration or preservation. This led to the degradation of entire ecosystems, soil erosion, biodiversity loss, and declining land quality. Industrialisation and uncontrolled consumption fostered development patterns that frequently ignored environmental costs. For Filipe Duarte Santos (2020), biodiversity loss and ecosystem collapse are among the greatest challenges of the 21st century.

Today, we are more aware of the environmental consequences of the Industrial Revolution, especially regarding carbon footprints,

deforestation, and widespread pollution. Although it played a crucial role in the development of modern societies, the Industrial Revolution is now central to discussions about sustainability, circular economy, and the urgent need to reduce environmental impact through green technologies and effective public policies. A growing focus on sustainability is reshaping practices across industry and society as a whole.

The evolving environmental awareness of graphic design

Graphic design has, to some degree, played a role in environmental degradation, especially following the Industrial Revolution. Nevertheless, awareness of its environmental impacts has evolved over time. Victor Papanek was one of the first to advocate for responsible design, highlighting the need for a design approach that addresses environmental challenges. He stressed that graphic design should play a key role in this process. Design can change the world, but it must be grounded in social and environmental responsibility (Papanek, 1975).

During and after the Industrial Revolution, mass production and consumption increased dramatically, with graphic design playing a central role. It was instrumental in promoting industrialised products, often linking consumption to progress and well-being. This contributed to the growth of disposable packaging, catalogues, and promotional materials, which added to the waste problem. Large-scale printing techniques such as lithography and later offset printing (Kipphan, 2001) played a role in this increase. These graphic production processes relied on paper and solvent-based inks, many of which were unsustainable. The environmental impact of industrial printing, particularly in its early years, was significant.

Graphic design also underpinned advertising campaigns that encouraged planned obsolescence and a throwaway culture, where products were rapidly consumed and discarded within an unsustainable cycle that disregarded the environmental costs of production and disposal. According to André Nunes (2021), editorial graphic design was, for a long time, geared towards large-scale production, focusing on communication effectiveness and fast distribution. This logic contributed to the proliferation of disposable materials such as packaging, catalogues, and advertisements, which quickly turned into waste.

In recent years, the graphic design industry has become increasingly aware of the environmental impacts of its practices and has been actively seeking and adopting more sustainable solutions. The demand for recyclable materials, eco-friendly inks, and more efficient printing processes has grown significantly. Additionally, the rise of digital design has helped reduce the physical impact of some graphic productions,

although the energy consumption associated with digital technologies presents its challenges.

Today, with rising ecological awareness, many graphic designers are already integrating sustainable practices into their creative processes to reduce environmental impact and promote a more responsible culture. The power of graphic design to influence behaviours and choices can be harnessed to advocate for ecological solutions and reduce its future environmental impact. As Berman (2016) asserts, the role of designers is not just to create beautiful solutions, but also to ensure those solutions have a positive impact on the world. Sustainable graphic design is not an option, it is a responsibility. Berman thus emphasises the importance of a graphic design practice that considers the ecological and social consequences of every decision, adopting an ethical and sustainable approach.

A paradigm shift

The graphic design industry faces significant challenges regarding resource consumption and pollution. However, accessible and practical solutions have been found that can significantly reduce its environmental impact. The transition to more sustainable practices requires a collective effort and a shift in mindset, where designers, companies, consumers, and educational institutions seek alternatives that minimise harm to the environment. The adoption of recyclable materials, eco-friendly inks, the digitisation of processes, and the promotion of controlled (on-demand) printing practices are just some of the many ways to create a greener and more responsible approach to graphic design.

Kipphan (2001) highlights that the proper treatment of waste produced by print shops, such as leftover ink and paper, is essential. Nunes (2021) argues that adopting a circular economy model, in which products are not discarded but recycled or reused, aiming for design solutions that can be maintained and updated over time, helps to prevent waste generation.

Within this growing movement towards more sustainable practices, educational institutions have an important role to play in raising students' awareness of environmental issues and encouraging the use of sustainable methods. Ezio Manzini (as cited in Plentz, 2020) states that designers can play a key role in this transition by incorporating new knowledge into their practices, and in this sense, education is fundamental to the process. The inclusion of sustainability in design course curricula is increasingly sought after by educators, students, and employers (Plentz, 2020), bringing benefits both for learning ecological concepts and for gaining practical experience.

Sustainable approaches in graphic design

Today, several approaches can be adopted to implement more sustainable graphic production. One of the main strategies involves the use of recyclable and sustainable materials. Choosing recycled paper or paper produced in an environmentally responsible manner helps to reduce the environmental impact of the graphic design industry. Similarly, using water-based inks or natural dyes helps to minimise the use of chemical solvents and the emission of volatile organic compounds, which are harmful both to the environment and to human health. The use of biodegradable or compostable materials, especially in packaging and other graphic products, is also a relevant alternative.

On-demand printing is another practice that significantly contributes to sustainability. In this model, only what is needed is produced, based on the actual demand of the client, which substantially reduces waste. Double-sided printing, optimising page layouts to minimise paper consumption, and producing smaller print runs are all effective strategies to prevent resource waste.

Digitisation also plays an important role. Reducing paper usage and resorting to digital graphic design whenever possible can help minimise waste generation. Creating campaigns and promotional materials in digital format helps reduce the environmental impact associated with physical prints. However, it is important to note that the energy consumption of the servers and devices required to create and view this digital content also contributes to the carbon footprint. As a result, there is growing pressure for designers to seek more energy-efficient digital solutions.

Another strategy is the recycling and reuse of materials. Adopting good practices for recycling paper waste, inks, and other materials is essential. Reusing production materials and packaging is an effective way to reduce the consumption of natural resources and minimise waste.

Alongside these measures, the adoption of more efficient technologies should also be considered. Investing in printers with low energy consumption and reduced waste emissions is a tangible way to lower environmental impact. Likewise, using printers that operate with eco-friendly inks, those with a lower impact on water resources and soil, is an increasingly viable and necessary solution.

Finally, the importance of education and environmental awareness within the sector must be emphasised. Designers and professionals involved in graphic production must receive adequate training on the available sustainable alternatives and their benefits. Only with this knowledge base can sustainability be meaningfully integrated into creative processes and project briefings, thereby promoting more ecological, conscious solutions aligned with contemporary environmental challenges.

Natural inks and dyes

Natural inks are produced from raw materials found in nature, such as bacteria, fungi, plants, animals and minerals. The preparation of these inks involves manual processes such as grinding, boiling, and/or colourant extraction using natural solvents. They serve as an eco-friendly alternative to synthetic inks, which often contain harmful chemicals that negatively impact both the environment and human health.

Natural inks and dyes have been used since pre-historic times in paintings, manuscripts, textile dyeing, body art, cosmetics, food colouring, and for decorating walls and artefacts. Relevant historical natural colourants include indigo blue (extracted from the plant *Indigofera tinctoria*), saffron yellow (from the plant *Crocus sativus*), cochineal red (from the insect *Dactylopius coccus*), Tyrian purple (from *Murex sp.* molluscs), sepia brown (from *Sepia sp.* cuttlefishes), carbon black (from burnt organic material), ochre (from iron oxide rich clays), ultramarine blue (from the lapis lazuli semi-precious stone), among many others.

The advantage of natural inks in modern times lies in their generally lower environmental impact and biodegradability, as they are typically free from toxic compounds such as formaldehyde, commonly found in synthetic inks. However, they can be less durable and more expensive than synthetic alternatives.

Graphic design, as a creative field concerned with visual communication, constantly seeks to innovate and offer unique experiences to audiences. The use of natural pigments and dyes can add several aesthetic and ethical benefits to the creative process. Oliveira (2023) highlights several advantages associated with the use of these colourants, particularly their environmental sustainability, since they are biodegradable and less harmful than synthetic colourants. Because they do not contain toxic substances such as heavy metals or petroleum derivatives, they offer a safer alternative for both humans and the environment. The author also emphasises the importance of valuing traditional knowledge, as the artisanal production of natural inks involves manual and empirical techniques passed down through generations.

The use of natural colourants offers the possibility to generate unique and culturally significant shades. From an aesthetic perspective, Logan (2018) observes that natural inks provide a unique visual quality, characterised by the subtlety of tonal and textural variations that synthetic inks cannot replicate. This imparts an organic and original character to projects, appreciated by artists and designers seeking to distance themselves from digital and industrial solutions. As the author states, each colour extracted from a plant can produce a unique combination, making the work distinctive and immersed in a natural and artisanal style. Regarding the manufacturing process, he argues that the production of natural inks offers a unique creative flexibility, allowing creators to adjust their

compositions according to the desired nuances and effects. He also explains that the process of making natural ink offers a completely different creative experience compared to commercial inks. Nevertheless, the author recognises some limitations, such as reduced durability, a narrower chromatic range, difficulty in standardisation, and higher costs. These characteristics may restrict the application of natural inks and dyes in industrial contexts. However, Logan (2018) stresses their potential in the context of sustainability, particularly if there is investment in research and development to improve their technical and economic viability.

Natural inks in graphic design education

In an educational context, the use of natural inks encourages student experimentation and creativity, promotes teaching practices that foster ecological awareness, interdisciplinarity, and a direct connection with nature, contributing to the development of more critical and environmentally responsible citizens. Oliveira (2023) highlights that incorporating natural inks into teaching practices, particularly in projects, helps develop students' environmental, social, and ethical awareness. It brings them closer to nature and sustainable processes and increases their sensitivity to ecological issues. The author also notes that the use of natural colourants supports the recognition of sustainable practices in both artistic and educational activities. It promotes environmental awareness not only through the learning of different ink production techniques and their artistic application, but also through the broader theme of art and the environment. The act of producing natural inks is itself a sustainable practice and a form of connection with the natural world.

The artisanal production of natural inks values empirical and traditional knowledge, offering students deeper engagement with creative processes. This approach encourages the recognition of local cultural practices and promotes critical reflection on contemporary production methods. Ethically, according to Oliveira (2023), this approach fosters a more critical and informed mindset, preparing students to make more responsible choices in their professional paths. By opting for environmentally friendly and socially just solutions, future professionals show a commitment to sustainable practices and a sense of care and respect for the natural world.

Thus, the introduction of natural inks and dyes in education not only enriches the technical aspects of creative processes but also serves as a powerful pedagogical tool for developing individuals who are more aware, critical, and committed to environmental, social, and ethical sustainability.

Natural inks in screen printing: a preliminary investigation

Our ongoing research explores the development and application of natural inks for screen printing, focusing on experimentation with colourants' extraction, thickeners and binders formulation, and the optimisation of ink properties such as homogeneity, viscosity, drying time, colour intensity, colourfastness, and overall print quality. Several tests have been carried out using different formulations at the different stages of ink production, with results carefully documented (Figure 1).

This preliminary approach emphasises plant-based inks derived from readily available botanical sources, with a preference for materials from food waste or invasive species wherever feasible. Among the pigments and dyes currently under investigation are anthocyanins (responsible for red, violet, and blue hues) found in sources like red cabbage and hibiscus flowers; betalains, which yield red and yellow tones and are present in beetroots; chlorophylls, found in green leaves such as spinach or in spirulina (a cyanobacterium rather than a plant), which contribute to green and yellow colours; curcuminoids from turmeric, producing vivid yellows and oranges; and carotenoids, which offer red, orange, and yellow colours and are abundant in vegetables such as carrots, tomatoes, and pumpkins.

Despite differences in water solubility among these colourant types, a general extraction method has yielded satisfactory results. Plant materials are chopped or ground and boiled in a minimal amount of water for approximately 15 minutes. The resulting liquid is filtered using a fine mesh (ideally finer than that used for screen printing). If necessary, the liquid can be further concentrated through additional boiling and filtering. While the resulting solution still contains other organic substances in addition to colourants, this process serves as a suitable base for ink production due to its simplicity. To obtain black ink, we are experimenting with carbonised plant materials such as vine or willow stems and olive pits. These are charred, ground into a fine powder, and then suspended in warm water to form a usable ink.

To achieve the necessary viscosity for screen printing, several natural-origin thickeners have been tested with success. These include sodium alginate (derived from brown algae), xanthan gum (a bacterial byproduct), and gum Arabic (a resin from acacia trees). Small amounts of the chosen thickener are added to the colourant solution under continuous stirring until the desired consistency is reached. The required quantity varies depending on the specific colourant source and its interaction with the thickening agent.

Some colourants, particularly anthocyanins and curcuminoids, are pH-sensitive and will change colour based on the acidity or alkalinity of the solution. Modifiers such as lemon juice or vinegar can be added to lower the pH, while substances like sodium bicarbonate or sodium hydroxide

can raise it. These should be introduced gradually and with constant stirring to control the resulting hue. It is also important to consider the pH of the water and paper being used, as these may influence the final outcome.

In terms of preservation, the longevity of these natural inks varies depending on the organic materials used. Most will remain viable for several days to a week if refrigerated. Sterility is crucial in prolonging shelf life, and natural preservatives such as cloves or wintergreen oil may help prevent fungal growth. For longer-term storage, freezing or dehydrating the concentrated colourant extract are also viable strategies.

These natural inks often exhibit ephemeral qualities, with colours that shift or fade over time depending on exposure to environmental conditions. This transient nature is part of their aesthetic and conceptual appeal. However, to extend the vibrancy of prints, it is advisable to keep them away from direct sunlight. UV-protective sprays can enhance lightfastness, and framing prints behind clear acrylic or museum-grade glass can offer additional protection compared to regular glass.

Practical use of natural inks in hands-on workshops

Integrating natural inks into educational settings is a practical and impactful way to raise awareness among future generations of designers about the importance of sustainability and adopting more conscious practices. Beyond being a creative and educational experience, it also provides an opportunity to engage with eco-friendly solutions and rethink everyday choices, fostering a greener and more responsible mindset.

To perform a preliminary evaluation of the practical application of the natural inks under investigation, hands-on workshops were conducted within an academic setting, engaging participants in both the preparation of the inks (Figure 1) and their application in the screen printing process (Figure 2).

We reintroduced analogue printing methods and encouraged collaborative exploration, blending creativity with hands-on experimentation, and highlighting the challenges and opportunities associated with using natural inks. These practical sessions served as a testing ground for the usability of natural inks and to collect feedback from users.

The workshop participants were able to produce functional and visually appealing prints (Figure 3), while substantially reducing toxic waste and resource consumption compared to traditional methods. Through experiential learning, the participants not only demonstrated great engagement and creativity, but also gained first-hand insights into the ecological implications of their creative practices and were motivated to prioritise sustainability in their future work.

Figure 1 – Ink preparation. Upper panel: Pigment extraction and addition of thickening agents. Lower panel: Addition of colour modifiers and comparison of colour samples.

Figure 2 – Hands-on workshop with natural inks. Natural inks prepared during the workshop and their application to screen printing.

Figure 3 – Serigraphy prints using natural inks. Final results of the hands-on workshops.

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AFFILIATION

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REFERENCES

Berman, D. (2016). *Do good design: How designers can change the world*. New Riders

Kipphan, H. (Ed.). (2001). *Handbook of print media: Technologies and production methods*. Springer. https://doi.org/10.1007/978-3-540-29900-4

Logan, J. (2018). *Make ink: A forager's guide to natural inkmaking*. Abrams

Nunes, A. M. M. (2020). *Design para a sustentabilidade: Métodos e práticas de design editorial e produção mais sustentável* [Relatório de estágio de mestrado, Escola Superior de Tecnologia de Tomar]. Repositório Comum. http://hdl.handle.net/10400.26/36614

Oliveira, J. R. (2022). A utilização dos pigmentos naturais no ensino de artes visuais: Uma revisão bibliográfica [The use of natural pigments in the teaching of visual arts: Literature review]. *Revista Thema, 21*(4), 1089–1096. https://doi.org/10.15536/thema.V21.2022.1089-1096.2564

Papanek, V. (1971). *Design for the real world: Human ecology and social change*. Pantheon Books

Plentz, N. D. (2020). *Sustentabilidade no ensino do design: Diretrizes e estratégias para o Brasil e Portugal* (Tese de doutoramento, Universidade de Lisboa, Faculdade de Arquitetura). Repositório da Universidade de Lisboa. https://repositorio.ulisboa.pt/handle/10400.5/20774?locale=pt_PT

Santos, F. D. (2020). *Os desafios ambientais criados pela Grande Aceleração do pós-guerra* [Trabalho académico]. Faculdade de Ciências da Universidade de Lisboa. https://repositorio.ul.pt/handle/10451/46231

Design ethnography for educational systems

An automated tool for mapping adult learners' sociocultural profiles through self-published photographic narratives on social media

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ABSTRACT

This article presents a study situated within the field of Design Ethnography, focusing on challenges related to the design of educational services within Brazil's Programme for the Integration of Vocational Education into Secondary Education for Youth and Adults (PROEJA). It outlines the problem framework, provides a brief review of the state of the art in netnographic methods currently in use, and introduces preliminary ideas for developing an automated netnographic system. This system aims to support the sociocultural exploration of adult learners by collecting qualitative insights from their self-representations and cultural narratives shared via social media, to inform innovative andragogical interventions within Brazil's federal education network. The study highlights the productive interplay between ethnography and design, where ethnography equips designers with in-depth user insights, enabling the development of more inclusive and tailored educational solutions. Employing techniques such as participant observation, in-depth interviews, and qualitative analysis, the research underscores the importance of understanding user contexts and their interactions with technology to enhance and expand the educational offerings of PROEJA. The complexity of the issue addressed calls for an Ethnographic Design approach, complemented by insights from Interaction Design, Systems Design, Discourse Analysis, and Semiotics.

Introduction

The empirical setting for this study is the Brazilian Federal Network of Vocational and Technological Education, also referred to as the network of Federal Institutes of Education (IFs). Established in 2008 by President Luiz Inácio Lula da Silva through Law No. 11,892, the initiative launched the first 38 Federal Institutes of Education, Science and Technology. Today, the network comprises 682 units, offering over 1.5 million enrolments annually. With 100 new campuses currently under development, the network is expected to reach 782 units across Brazil within the next two years.

Despite a legal mandate requiring that at least 10% of vacancies be reserved for socially vulnerable youth and adults enrolled in the PROEJA programme, the network has, over the past 18 years, allocated only an average of 2.2% of its vacancies to this modality. Why does the network fail to comply with the legal provision? Why is the dropout rate among enrolled students so alarmingly high? How can the offer of PROEJA programmes be expanded and retention improved?[1]

Donald Norman, in *The Design of Everyday Things* (2013), asserts that effective design begins with a clear identification of the challenges at hand and a thorough understanding of the users. He maintains that "good design practices require the precise identification of the problem before seeking solutions" (Norman, 2013, p. 72). In this light, design is conceived as a research-driven process, with the initial definition of the problem serving as a critical step to ensure that resulting solutions are relevant, functional, and contextually appropriate.

We have therefore chosen Design Ethnography as our primary field of inquiry and methodological foundation to confront the scale and complexity of this problem. The issue we address aligns with Buchanan's (1992) notion of *wicked problems*—complex, ill-structured design challenges that resist definitive formulation and solution, demanding interdisciplinary and interactive approaches for their understanding and resolution. Unlike *tame problems*, which are well-defined and admit predictable solutions, *wicked problems* are dynamic and interconnected, precluding singular or final answers.

Below, we visually express the conurbations between fields that characterise our research.

Our general objective is to support the development of high-quality public education services by the Federal Institutes, informed by netnographic data. This goal is particularly ambitious when directed towards reaching vulnerable populations who have disengaged from formal education. More

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1 Governance and transparency data for the entire Federal EPCT Network available on the Nilo Peçanha Platform (PNP):https://app.powerbi.com/view?r=eyJrIjoiZDhkNGNiYzgtMjQ0My00OGVlLWJjNzYtZWQwYjI2OThhYWM1IiwidCI6IjIlNjgyMzU5LWQxMjgtNGVkYi1iYjU4LTgyYjJhMTUzNDBmZiJ9
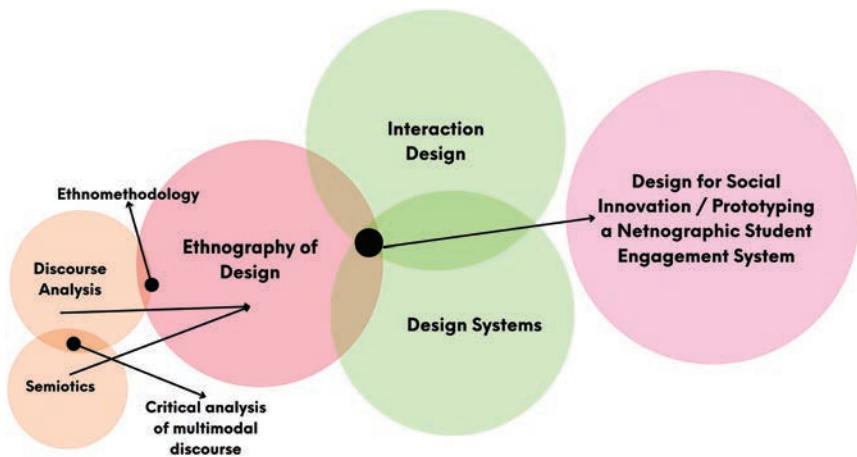
Figure 1 – Visual representation to express the conurbations between fields that characterise our research.

specifically, we intend to prototype an automated netnographic probe capable of keeping educators and managers continuously updated on the sociocultural profiles of students, as revealed through their public content on social media, subject to their express consent.

By proposing continuous student netnography, we aim to generate important, timely information to assist designers, managers, educators, and teachers—that is, educational teams—in overcoming the limitations of traditional approaches. This includes strategic planning to broaden PROEJA's educational reach, as well as informed, ethnographically grounded action to enhance student retention and reduce dropout rates. The integration of cultural, social, and emotional insights is expected to foster more effective and context-sensitive educational strategies, particularly within the landscape of socially vulnerable adult learners.

Clear identification of challenges

According to Article 2 of Presidential Decree No. 5,840 of 13 July 2006, which formally established the PROEJA Programme. In 2006, the Federal Institutes were required to allocate at least 10% of their total admissions to PROEJA, based on student enrolment figures from the previous year, and to expand this provision in subsequent years. The decree further stipulated that this expansion must be integrated into the institutional development plans of each unit within the federal network.

The legislator's intention to promote the expansion of PROEJA is unequivocal. The document sets minimum and immediate standards for this provision from 2007 onwards, establishing a target of 10% of regular student vacancies in federal vocational institutions to be devoted to

PROEJA. Nevertheless, this directive has posed an enduring challenge for the Ministry of Education. Even the programme's official documentation acknowledges that "expanding the offer of Professional and Technological Education (EPT), integrated with basic education, remains a significant challenge to be addressed and constitutes a priority within the National Education Plan 2014–2024 (Law No. 13,005/2014)."

The scale of this challenge becomes evident when examining numerical data from the Nilo Peçanha Platform. In 2023, rather than the legally mandated 10%, only 2.2% of total vacancies in the Federal Institutes were allocated to PROEJA. The Federal Institute of Goiás (IFG) was a rare exception, assigning 12.2% of its vacancies to the programme. Ten FI's offered less than 1%t of their places to PROEJA, and three institutes did not offer any vacancies that year. Why does this legally mandated provision remain unfulfilled? Such a question cannot be answered without the in-depth insights afforded by ethnographic investigation. Our focus group consists of students enrolled in PROEJA courses located in the metropolitan region of the state of Espírito Santo, specifically at the Vitória and Serra campuses of the Federal Institute of Education, Science and Technology of Espírito Santo (IFES), which allocated only 1.91% of its total vacancies to PROEJA in 2023.

According to the 2022 Demographic Census conducted by the Brazilian Institute of Geography and Statistics (IBGE), Brazil had 11.4 million individuals over the age of 15 who were illiterate. The official website of the Ministry of Education states that PROEJA was created to meet the demand among youth and adults for vocational training at the secondary level— education from which they are often excluded, as they are from secondary education itself. Although the programme is intended for adults aged 18 and over, the gap between the 2022 figures on functional illiteracy and the scale of PROEJA's provision in 2023 highlights a significant educational deficit. This is precisely the issue we aim to address through innovative support methods grounded in Ethnographic Design.

Reviewing our conceptual and methodological support

Design ethnography

Deleuze and Guattari, in *A Thousand Plateaus* (1980), conceptualised *assemblage* as emerging from provisional configurations of bodies, affects, signs, and institutions. Their notion of rhizomatic and non-hierarchical connectivity forms the base perspective adopted in this research. Drawing on Ingold's (2013, pp. 20-21) view of design as a continuous process of "growth along lines," we investigate the rhizomatic interactions between the social media images of adult students and their self-representations to construct meaningful narratives within a sociocultural background.

Ethnography, whose roots lie in the late 19th and early 20th centuries with pioneers such as Bronisław Malinowski and Franz Boas, has evolved considerably.[2] Initially grounded in anthropology, its methodologies have since been adopted by disciplines such as sociology, communication, and design. As Gunn, Otto, and Smith affirm, "design anthropology offers a unique approach to addressing complex social challenges by combining ethnographic insights with participatory design methods, enabling the co-creation of solutions that are deeply rooted in the experiences of communities" (2020, p. 45).

Throughout 2024, a participatory netnographic observation was conducted across social media platforms of a selected group of students identified as key informants. Additionally, both open and semi-structured interviews were made with PROEJA's educators, teachers, and students at IFES, as well as with experts, including a legal scholar specialising in image rights and internet copyright. These efforts supported ethical and legal reflections on the use of student imagery within systems designed to inform pedagogical planning.

Turning to netnography, our work is primarily guided by Pink's reflections. She argues that "digital ethnography is not simply about translating traditional ethnographic methods into the digital domain; it is about rethinking the way we understand and engage with the social world in an era in which the digital and the physical are increasingly intertwined" (Pink et al., 2016, p. 12). Netnography enables the identification of behavioural patterns and cultural barriers often overlooked by quantitative methods (Pink et al., 2016). These insights foster more empathetic and context-aware decisions in design (Müller, 2021), contributing to andragogical solutions better aligned with the complex realities of socially vulnerable adult learners.

Educational netnography should inform the creation of new courses, delivery formats, intuitive interfaces, strategies for engagement, and personalized content. Furthermore, it should assist institutions in strategic planning to expand PROEJA offerings, including the exploration of the 20% online delivery already foreseen by law. By examining students' behaviour on social media, educational planners can gather insights that may lead to new approaches, including distance education, which remains unregulated for this audience. Barton and

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2 Clifford Geertz (1973) emphasises ethnography as a means of conducting a comprehensive description of culture, enabling researchers to explore the complexities of everyday life. By the 1980s, designers began employing ethnographic methods to adopt user-centred approaches, understanding individual needs and behaviours. We propose continuous student netnography to gather dense, up-to-date information about learners, assisting educational teams in overcoming traditional limitations and strategically expanding PROEJA's offerings. This approach integrates cultural, social, and emotional insights to improve student retention and combat dropout rates, fostering more relevant educational solutions for the future.

Tusting (2005) emphasise the importance of understanding students' cultural practices, social relations, and personal experiences to design learning environments that are responsive to emotional, social, and cultural complexity.

Ayala and Koch (2019) proposed a structured method for ethnographic analysis using visual data such as sociograms and participant-generated drawings in the study of group dynamics and social interaction. Their method emphasises three key elements: representation—how participants visually express their relationships and contexts; preview— the use of graphic tools to map patterns of interactivity; and interaction— how visual elements reflect group behaviours and hierarchies. This approach will be closely followed, as it is relevant to research on social media and education. It captures non-verbal and subjective nuances often overlooked by traditional methods such as questionnaires. Methodological rigour and ethical responsibility will be constantly applied when collecting and interpreting images.

Similarly, Baart and Roos (2022) developed the CIDA (collective research framework to study and support teachers as designers in technological environments) framework for the standardised analysis of participant-generated imagery. Grange and Lian (2022), drawing on Barthes' theories, advanced the integration of text and image, while Lobinger et al. (2022) explored how digital platforms shape the production and dissemination of visual content. Salmons (2016) classified visual research methods into practical categories, and Roger (2023) linked visual data to narrative processes in health and education.

Together, these contributions offer a robust methodological foundation for the collection, analysis, and interpretation of visual data in qualitative research. Nonetheless, a notable gap in the literature is the application of netnography to data storage systems and the continuous accessibility of ethnographic information by educators and management teams. While the literature addresses data collection and analysis techniques, little attention has been given to how digital platforms might dynamically integrate visual, textual, and interactive data, allowing users to access, update, and reanalyse ethnographic insights in real time. For instance, there is a lack of discussion on how AI or cloud-based systems might preserve the original context of visual data (including metadata from social media interactions) while facilitating collaboration between researchers and decision-makers. This capability is especially critical for institutions engaged in ongoing analysis, such as schools seeking to monitor pedagogical interventions or develop evidence-based educational policies.

Web ethnography enables researchers to observe interactions in real time, participate in digital discussions, analyse user-generated content, and explore the nuances of virtual communities (Markham, 2013). As digital platforms continue to evolve, they offer new opportunities for

researchers to investigate complex forms of social interaction in the digital age (Pink et al., 2016). The symbiotic relationship between ethnography and design becomes particularly valuable when ethnographic insight helps design teams to identify the subtle but significant details of user experience, ultimately resulting in more inclusive and personalised educational services, as expected from Brazil's public education system. In an educational environment increasingly shaped by technology, there is a pressing need for more context-aware, user-centred approaches in the design of platforms, learning resources, curricular plans, digital tools, and various educational products and services. Netnography emerges as an essential strategy for accessing adult learners' profiles via authorised access to their digital social spaces.

Ethical issues

In addressing the ethical dimensions of this study, we have adopted established ethical protocols. Participation will be restricted to adult learners (aged 18 and over) with demonstrated cognitive capacity to provide informed consent (BPS, 2018). Our focus remains on the sociocultural contexts of mature students enrolled in PROEJA. Only images explicitly marked as public in their privacy settings will be considered, reflecting users' demonstrated intent for public disclosure (Boyd, 2014) and respecting the principle of "reasonable expectation of observability"(NESH, 2020).

Regarding informed consent, we propose a two-tiered permission structure: (a) Institutional Consent granted upon enrolment, under the supervision of pedagogical staff; and (b) Specific Research Authorisation, detailing the study's aims (knowledge production for educational improvement), scope of data usage (academic publications, system development), and the right to withdraw consent at any time, per AoIR (2019) guidelines.

Legal scholar Sarah Quintão, a specialist in internet privacy rights at NOVA School of Law, has noted that while no explicit legal barriers exist, adherence to key legal and ethical principles is essential[3]. These include the constitutional rights to privacy and image, further elaborated in Brazil's Civil Code and the General Data Protection Law (Law No. 13.709/2018), as well as the provisions of the Internet Bill of Rights (Law No. 12.965/2014). In this context, image rights, considered a form of biometric personal data under the LGPD, may be revoked at any time by the data subject. Moreover, data processing must adhere to principles of purpose limitation,

3 Legal scholar Sarah Quintão, a specialist in internet privacy rights at NOVA School of Law, noted in a personal interview that while no explicit legal barriers exist, adherence to key legal and ethical principles is essential (S. Quintão, personal communication, April 1, 2025).

necessity, and transparency, avoiding any undue exposure or harm. When sensitive data are involved, stricter legal safeguards apply. Misuse may result in administrative sanctions or legal liability. Consequently, rules must be established, not only to secure student authorisation for accessing their social media content, but also to systematically exclude sensitive images. Furthermore, educational teams must treat the data obtained through the netnographic process with the same professional and ethical responsibility as they currently do when handling other forms of student data, limiting its use strictly to intended educational purposes.

The involvement of pedagogues ensures age-appropriate consent procedures (Megele, 2017), alignment with the principles of emancipatory education promoted by PROEJA (Freire, 1996), and continuous ethical monitoring. Our approach applies the situated ethics model proposed by Ess and Jones (2021) to digital research, balancing epistemological needs (authentic behavioural data), participant autonomy (via layered consent), and social responsibility (avoiding accusations of "data mining" – Tuck & Yang, 2014). The protocol is aligned with the Brazilian LGPD (Art. 7), the Belmont Report principles (respect, beneficence, justice), and COPE guidelines for educational research. Maintaining a strict separation between online and offline spheres is no longer viable for educational institutions engaging with youth and adult learners, as these realms have become inextricably intertwined—not only for entertainment but also in professional and academic life.

Social media platforms collect and process personal data on a vast scale for advertising purposes, raising ethical, social, and political concerns that threaten democratic systems. These platforms rely on machine learning algorithms to analyse users' behaviour, preferences, and interactions, primarily to optimise personalised advertising and user engagement (Zuboff, 2019). In 2022, more than 98% of Facebook's revenue stemmed from such data monetisation practices (Meta, 2023). This approach results in the construction of psychographic profiles that support hyper-targeted marketing strategies (Andrejevic, 2020). Research shows that such systems can reinforce filter bubbles, reduce exposure to diverse viewpoints, and entrench prejudices (Pariser, 2011). Excessive data collection—commonly referred to as data surveillance— has also been criticised for violating users' expectations of privacy (Solove, 2013). In response, regulatory frameworks such as the European Union's General Data Protection Regulation (GDPR) have emerged to ensure greater transparency and user control (Voigt & Von dem Bussche, 2017). It is therefore essential to consider alternative models of netnographic research that prioritise privacy without compromising technological innovation.

Although the guidelines developed during this research are still undergoing testing and refinement, we believe that a visual dataset—

compiled with students' consent and derived from their social media —can serve as a kind of "visual text" representing sociocultural dimensions of student life. This can be a valuable contribution from Ethnographic Design to educational teams, offering early-stage insights to inform designers, managers, pedagogues, and teachers in the creation of educational projects, course structures, and pedagogical strategies. A curated visual dataset may also serve as a source of inspiration, encouraging educators to act with greater creativity and empathy.

Viewing the sociocultural profile of PROEJA students

In examining the images produced and shared by students on social media, we draw upon theoretical insights from a range of thinkers. Pierre Bourdieu, in *Photography: A Middle-Brow Art* (1965), analyses how photography both reflects and reproduces social structures. He emphasises that the act of selecting and producing images is embedded in habitus and cultural capital, thus transforming image-making into a sociologically meaningful practice.

In *Camera Lucida*, Roland Barthes explores photography as a cultural artefact, underlining its power to preserve moments and meanings and its role in shaping memory and culture. Buchanan (1992), in his reflection on design and *wicked problems*, investigates how visual elements, including photographs, contribute to the construction of complex narratives. He argues that imagery may serve as a medium for articulating ambiguous or ill-defined sociocultural issues, becoming a tool for autoethnography and contextual analysis.

In *Visual Sociology*, Howard S. Becker (1995) examines the use of photographs to document and interpret social realities. His perspective is echoed in research by Thomas Josué Silva (2016), who, studying iconography in the context of mental health, demonstrates how the selection of personal images can reveal individual trajectories of suffering and resistance. Silva's work blends ethnography and art to decipher subjective experiences and their representation.

Antônio da Silva Câmara, in *Essays on the Sociology of Art* (2018), explores how biographical photography may contribute to the reconstruction of collective identities. He underscores the importance of visual curation in expressing marginalised memories. Similarly, Wagner, in *Urban Space Visualisations*, analyses how digital images shared on social networks construct identity narratives. His approach proposes interdisciplinary methods for interpreting such imagery as cultural documents.

This conceptual and methodological roadmap forms the basis for developing a structured approach to the collection and analysis of visual data from students' social networks. Through iterative testing

ITINERARY FOR COLLECTING IMAGES*

image	data	rules	results
1ª, 3ª, 5ª, 7ª, 9ª, 13ª	Student selfie	Selfs in different environments.	The spatial distribution of selfies exposes the habitus and social fields navigated by learners in their daily lives.
2ª	Photo without people	First photo without people	The spatial distribution of selfies exposes the habitus and social fields navigated by learners in their daily lives..
4ª	Photo of the student with another person	The person who appears most often with the student on the social network in the most recent photo	It reveals something about the student's family situation.
6ª e 8ª	Photo of the student with up to 4 people	look for 4 people who appear most with the student, in the most recent photo	information about family, friendships, participation in cultural groups
10ª	Photo of the student with the most people	moment that shows the student with more people	It shows social contexts of broad participation, such as religious rites, shows, parties, etc.
11ª	Photo of the student with the most people (after 10th)	moment that shows the student with more people	It complements the 10th photo, showing other social contexts of broad participation.
14ª, 15ª, 16ª	The oldest photos of the students	older regardless of whether there are other people	It shows experience, allowing comparison with recent representations.

Figure 2 – Preliminary outline, Script for preparing the Student Album.

and feedback, we aim to refine these rules and incorporate them into a tool that can offer actionable insights for educational planning and the provision of personalised support within PROEJA.

Conclusion

This solution may be considered innovative in its capacity to enhance the sociocultural profiling of students in ways that inform andragogical interventions—educational practices specifically aimed at adults. It promotes inclusion, personalisation, and engagement across a variety of technology-mediated learning environments, tailoring each educational offer more closely to the learners' realities. Our overarching objective is to foster the creation of authentic and impactful learning experiences, whether delivered in face-to-face, hybrid, or fully online formats, while

simultaneously seeking to reduce dropout rates and support educational management teams in expanding PROEJA's educational provision.

In the next phase of this research, we intend to implement the proposed netnographic probe in PROEJA's Integrated Technical Courses at the Secondary Education level. Following this implementation, we will conduct interviews with pedagogical teams and students, monitor classroom performance data, and assess the probe's impact on the planning and delivery of courses for PROEJA learners.

In our interviews and open discussions with educators and education professionals, one question consistently emerged: how important is it to understand the student profile when planning educational activities? All interviewees unequivocally emphasised the critical importance of knowing one's student audience for effective planning. However, there is currently no widespread practice of providing educational teams with detailed data about their students for the purposes of designing services or learning experiences. In practice, many educational offers are developed with very limited insight into the characteristics of their target audience.

By offering support for educational design, this netnographic approach is particularly well-suited to the PROEJA context. The programme serves a markedly diverse student population, composed of individuals of varying ages and cultural backgrounds, which contrasts with the more homogeneous profiles typically found in conventional classrooms. A deeper understanding of these students' contexts may facilitate the development of more effective and user-centred pedagogical solutions. More broadly, gaining deeper insight into our target audience can only enhance the quality of the educational strategies developed.

Automated Student Netnography may be understood as a pedagogical innovation that seeks continuously updated sociocultural perspectives to support collaborative and creative problem-solving in educational contexts. It aims to promote more holistic and integrated approaches for enhancing and expanding PROEJA's offerings. Looking ahead, we anticipate a deeper commitment to student-centred design approaches, drawing on ethnographic knowledge to foster personalised and meaningful learning experiences. We will also pursue collaboration with technology specialists to further develop the prototype of the Automated Netnographic Probe for adult learners. It is imperative that the design and ethnography community give precedence to ethical considerations when employing such systems, ensuring privacy, equity, and the integration of best practices into educational design.

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REFERENCES

Adolescence. (2025). [TV series]. Netflix.

Andrejevic, M. (2020). *Automated media*. Routledge.

Ayala, R. A., & Koch, T. F. (2019). Visual ethnography on social media: A systematic approach to analysing participant-generated images. *Journal of Qualitative Research*, 15(3), 45–67.

Baart, R., & Roos, V. (2022). Visual data analysis frameworks in qualitative research. *Journal of Visual Ethnography*, 12(2), 89–104. https://doi.org/xxxx

Barton, D., & Tusting, K. (2005). *Beyond communities of practice: Language, power and social context*. Cambridge University Press.

Becker, H. S. (1995). Visual sociology, documentary photography and photojournalism: It's (almost) all a matter of context. *Visual Studies*, 10(1–2), 5–14.

Boellstorff, T., Nardi, B., Pearce, C., & Taylor, T. L. (2012). *Ethnography and virtual worlds: A method manual*. Princeton University Press.

Boni, C., Moura, M., & Landim, P. da C. (2019). Contemporary design practices. *Design Studies*, 27(3).

Bourdieu, P. (1990). *Photography: A middle-brow art* (S. Whiteside, Trans.). Stanford University Press. (Original work published 1965)

British Psychological Society (BPS). (2018). *Ethics guidelines for internet-mediated research*. https://www.bps.org.uk/news-and-policy/ethics-guidelines-internet-mediated-research-2017

boyd, d. (2014). *It's complicated: The social lives of networked teens*. Yale University Press.

Brazil. (1988). *Constitution of the Federative Republic of Brazil of 1988*.

Buchanan, R. (1992). Wicked problems in design thinking. *Design Issues*, 8(2), 5–21.

Câmara, A. da S. (2018). *Ensaios sobre a sociologia da arte*. Editora UFPE.

Ess, C., & Jones, S. (2021). *Ethics in digital media* (3rd ed.). Polity Press.

Farrell, T. S. C. (2002). Lecture and teaching to the whole class. *Research in Language Teaching*.

Freire, P. (1996). *Pedagogy of autonomy: Essential knowledge for educational practice* (M. B. Ramos, Trans.). Paz e Terra. (Original work published 1996)

Grange, L., & Lian, A. (2022). Text-image integration in digital narratives. *Visual Communication*, 21(4), 567–589. https://doi.org/10.1177/14703572211017314

Geertz, C. (1973). *The interpretation of cultures: Selected essays*. Basic Books.

Gunn, W., Otto, T., & Smith, R. C. (2020). *Design anthropology: Theory and practice*. Bloomsbury Academic.

Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice* (3rd ed.). Routledge.

Hine, C. (2000). *Virtual ethnography*. SAGE Publications.

IBGE – Instituto Brasileiro de Geografia e Estatística. (2022). *Censo demográfico 2022: Alfabetização – Resultados do universo*.

IBGE – Instituto Brasileiro de Geografia e Estatística. (2023). *Censo 2022: Taxa de analfabetismo cai de 9,6% para 7,0% em 12 anos, mas desigualdades persistem*. Agência IBGE de Notícias.

IFBA. (2024, 24 January). *O Campus Irecê encerra nesta quarta-feira processo seletivo simplificado para cadastro de reserva no PROEJA*. Instituto Federal da Bahia.

IFES. (2024, 14 November). *Processo seletivo do IFES oferta 200 vagas para cursos da Educação de Jovens e Adultos*. Instituto Federal do Espírito Santo.

IFF. (2024, 24 January). *IFF abre inscrições para cursos técnicos do PROEJA 2024*. Instituto Federal Fluminense.

IFMS. (2024, 24 January). *Abertas inscrições em cursos técnicos para jovens e adultos*. Instituto Federal de Mato Grosso do Sul.

IFPB. (2024, 24 January). *IFPB abre 230 vagas para Educação de Jovens e Adultos em vários cursos*. Instituto Federal da Paraíba.

IFPI. (2024, 24 January). *IFPI abre inscrições para 500 vagas em cursos técnicos do PROEJA*. Instituto Federal do Piauí.

IFRN. (2024, 24 January). *PROEJA 2024: Último dia de inscrições*. Instituto Federal do Rio Grande do Norte.

IFSC. (2024, 24 January). *Inscrições abertas para cursos técnicos e PROEJA para ingresso em 2024*. Instituto Federal de Santa Catarina.

Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. Routledge.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Lobinger, K., et al. (2022). Digital platforms and visual content production. *New Media & Society, 24*(3), 345–362. https://doi.org/xxxx

Markham, A. N. (2013). Share, like, recommend: Decoding social media recommendation. *ResearchGate. Journalism Studies, 13*(5–6), 815–824. https://doi.org/10.1080/1461670X.2012.664430

Markham, A. (2018). Ethics in digital research. In N. Fielding (Ed.), *The SAGE handbook of online research methods* (pp. 213–228). SAGE Publications.

Megele, C. (2017). *Social media and social work: Implications and opportunities for practice*. Polity Press.

Meta. (2023). *Annual report 2022*. Meta Platforms Inc.

Michos, K., & Hernández-Leo, D. (2021). CIDA: A collective inquiry framework to study and support teachers as designers in technology-enhanced learning environments. *Educational Technology Research and Development, 69*(2), 123-143. https://doi.org/10.1007/s11423-020-09822-7

NESH – Norwegian National Research Ethics Committees. (2020). *Guidelines for research ethics in the social sciences and humanities*.

Nilo Peçanha Platform (PNP): https://app.powerbi.com/

Norman, D. A. (2013). *The design of everyday things* (Rev. & expanded ed.). Basic Books.

Padovani, S., Spinillo, C. G., & Gomes, Í. M. A. (2009). Development and application of a descriptive-normative model for website analysis. *Production*, *19*(3).

Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*. Penguin Press.

Pereira, R. (2021). Social media research: Ethical challenges in youth and adult education. *Court*.

Pink, S., Horst, H., Postill, J., Hjorth, L., Lewis, T., & Tacchi, J. (2016). *Digital ethnography: Principles and practice*. SAGE Publications.

Quintão, S. (2023). Legal scholar Sarah Quintão, a specialist in internet privacy rights at NOVA School of Law, noted in a personal interview that while no explicit legal barriers exist, adherence to key legal and ethical principles is essential (S. Quintão, personal communication, April 1, 2025).

Roger, A. (2023). *Visual data and narrative in health and education*. Routledge.

Rosa, S., Fors, V., Bergquist, M., & Osz, K. (2022). *Emerging technologies: Life on the edge of the future*. Routledge.

Salmons, J. (2016). *Doing qualitative research online*. SAGE Publications.

Silva, T. J. (2016). Artistic creations and narratives: Ethnographic experiences in psychosocial care. *Cadernos Brasileiros de Saúde Mental*, 8(20), 45–60.

Silva, T. J. (2016). Iconographies in mental health: Photography, suffering, and resistance. *Cadernos de Arte e Antropologia*, 5(1), 67–82.

Solove, D. J. (2013). *Nothing to hide: The false trade-off between privacy and security*. Yale University Press.

Spindler, G. D. (1982). *Doing the ethnography of schooling: Educational anthropology in action*. Holt, Rinehart and Winston.

Suchman, L. A. (1987). *Plans and situated actions: The problem of human-machine communication*. Cambridge University Press.

Tidwell, J. (2011). *Designing interfaces* (2nd ed.). O'Reilly Media.

Tuck, E., & Yang, K. W. (2014). *Youth resistance research and theories of change*. Routledge.

Voigt, P., & von dem Bussche, A. (2017). *The EU General Data Protection Regulation (GDPR): A practical guide*. Springer.

Wagner, C. (2023). *Visualisations of urban space: Digital age, aesthetics and politics*. Routledge.

Materials for participation

How to overcome barriers with tangible designerly means

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ABSTRACT

The article explores how participatory processes can actively involve stakeholders, particularly silent groups with limited experience in participation. It highlights the need for low-threshold and playful tools to overcome barriers such as linguistic, relational, emotional, generational, structural, or power-related challenges. Designerly tools and tangible materials are shown to effectively bridge these gaps, fostering meaningful dialogue and empowering participants. The article draws on theoretical foundations such as Sanders' Make Tools, which reveal tacit knowledge through the creation of artifacts, and Marres' Objects of Participation, which emphasize the role of materials in democratic engagement. Illich's concept of Convivial Tools supports empowerment and autonomy, while Morton's Hyperobjects offer a meta-perspective on complex systems, aiding understanding broader contexts like the climate crisis. In this paper those approaches of materialized participation are transferred to the contexts of education and digital literacy through two case studies. The first case examines participatory interventions in a socially disadvantaged school environment, using visual, spatial, and tactile tools to engage parents and overcome language barriers. Materials such as a school model and tangible material probes helped participants express feelings and perceptions, fostering inclusion. The second study used tangible tools like paper models, Lego blocks and metaphors to explain blockchain technology to non-experts, promoting digital literacy and active participation. The research question to be tackled in this article is, how materialized participatory tools reduce participation barriers and foster empowerment in socially disadvantaged educational settings and digital literacy initiatives. The findings demonstrate that participatory materials reduce barriers, initiate dialogue, and enable complex ideas to be grasped.

KEYWORDS

Participation, barriers, literacy, materials, tangibility

Introduction

When setting up participatory processes, one of the main questions is how certain stakeholders can be actively and meaningfully involved in the design process. The aim should not only be to involve actors who already have a lot of experience with participatory processes, but also to reach those people who are affected by the issues to be addressed with no experience in participation. For these so-called "silent groups" (Berlin Senate & City Lab, 2022) additional efforts and strategies are required to win their willingness and interest in the participatory process. Gaining their perspective and incorporating this knowledge into the design process can have a significant impact on the entire process.

In order to convince actors who are inexperienced in participatory processes, creative and playful tools can help to overcome hesitation and distance. Therefore, designerly tools are able to overcome these different types of barriers in participatory processes. The barriers can be linguistic, relational, emotional, age-specific, experience- or knowledge-based, structural or power-related.

The approach of overcoming these barriers is to offer low-threshold entry points to start a meaningful dialog by using physical collaborative materials to create a meaningful dialog with participants as experts of their everyday lives.
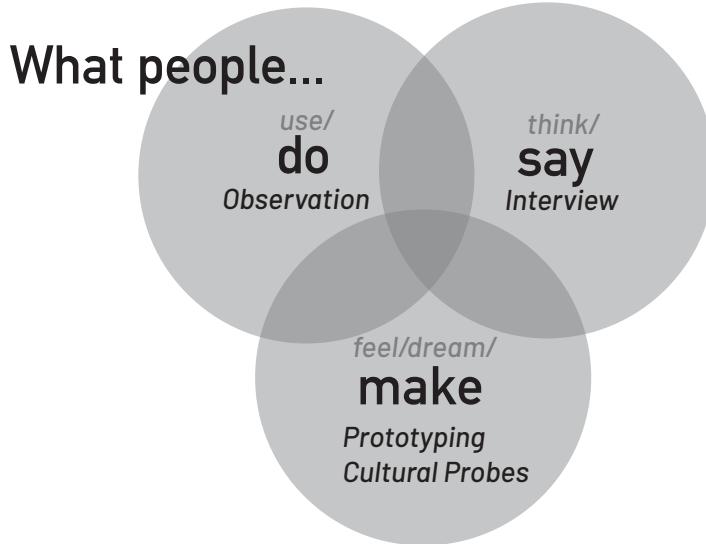
Figure 1 – The adapted visualization of Sanders' (2003) model describes which method provides which participatory knowledge: Methods, such as interviews, allow participants to express themselves verbally; methods, such as observations, allow the researcher to observe how participants use objects in different ways; and methods, whereby participants create something, let the researcher understand what participants feel and dream.

Existing approaches and practices
with participatory materials

A range of design-related approaches help to understand the meaning and importance of these designerly materials. To better understand how tangible materials are integrated into participatory processes as well as the different dimensions and intentions behind them, it helps to take a closer look at Elisabeth Sanders' Make Tools. For Sanders, tangible materials offer a deep understanding of how participants "know, feel and dream" (Sanders, 2003). It describes how the materials enable people to talk about their unconscious emotions. It has even more insight potential when participants create their own artifacts. When verbally describing these conceptual and procedural artifacts (Schubert et al., 2021), the participants start to understand their emotions by themselves – sometimes for the first time or even after their explanation. Therefore, group workshops or interviews are suggested after creating these materials (Gaver et al 1999; Mattelmäkki, 2005).

On how to transform tacit into explicit knowledge, Polanyi already described in his books about "personal" and "tacit knowledge" (Polanyi, 1958; Polanyi, 1966). The so called implicit, embodied or silent knowledge, describes for the philosopher and natural scientist Polanyi a process of knowing. He states that we know more, than we can express verbally (original "we can know more than we can tell", 1966, p. 4). Therefore, not only verbalizable knowledge is released, also hidden and subconscious emotions can be revealed. This approach connects directly with the dimensions of making (and making methods) Sanders describes.

Another approach was manifested by Noortje Marres: she describes Objects of Participation, through which she underlines the potential of materials that enable meaningful participatory actions (Marres, 2012). She describes in her book which roles objects, structures and technology have in democratic set ups. So, the combination of tangible objects and intangible digital or political structures connects more abstract concepts of participation. But also in this approach, we can take with us, that also politics and technologies are shaped by surrounded objects and materials.

Convivial tools, a term coined by Ivan Illich (1973), supports the approach that instruments based on conviviality, are able to empower individuals and communities without becoming oppressive or alienating. The tools are accessible, participant-friendly and support decentralized use. They allow individuals to act according to their needs and values and foster empowerment.

The tools enable autonomy, creativity, and self-expression, allowing the participants to achieve their goals without excessive dependence on external systems or experts. Convivial tools promote community engagement and enhance relations between actors. For sure the tools also have limits or thresholds: If the tools exceed a certain level of

complexity and scope, they can become counterproductive and create more harm to participate rather than benefit the convivial process. The participatory materials follow the paradigms of convivial tools.

Another helpful approach could be seen in the concept of "Hyperobjects" by Timothy Morton (2013). Although locality is often important in participatory processes, the reference to hyperobjects – characterized by non-locality – is nevertheless important to consider in this context, because it takes on the perspective to be one part of a complex system. It is important to understand the larger system when dealing with issues such as the climate crisis or educational inequality. A better understanding of the challenges, such as the relationships or non-relationships between school system stakeholders, is highly relevant to the local issue. Understanding the national or global perspective on educational challenges is also crucial. The fact that the challenges are understood – even if the larger system is barely tangible – can help to understand the challenges on a large and small scale.

The capability seen in these approaches is that Sanders and her teams research, which often relates to the health sector (Lavender et al, 2020; Patterson et al. 2017), has great potential to be transferred to other contexts, such as the public sector and technology-centered themes. Additionally, the ability of making complex and abstract contents more graspable and understandable (Marres, 2012), is a direction the article is drawing on.

Two case studies should demonstrate this potential: the first one is about children education in the public sector. It shows how these approaches can work in a real surrounding with local challenges. Another case is showing how abstract, technological contexts can be explained by simple, participatory tools, helping to understand complex mechanisms for non-tech-savvy participants.

The participatory processes can be seen as 'assemblages in action'. The case studies bring together a diverse mix of actors (Latour, 2005) – human (students, parents, non-experts, designers) and non-human (visual tools, paper models, spatial arrangements) – in a way that enables new forms of meaning-making and dialogue. The tangible materials act as active agents in the participatory process, aligning with the assemblage idea that agency is distributed.

Different types of barriers

Barriers can cause many challenges in participatory processes. Those barriers can be linguistic, relational, emotional, age-specific or in-between generations, experience- or knowledge-based, structural or power-related. To overcome these barriers ¬– which have arisen in a prior time before the participatory process took place ¬– different strategies, how to overcome these barriers, can be used.

One strategy observable in various Participatory Design projects is the up- or down-scaling of the local context scenarios which the participation process addresses: a neighborhood, a hospital (room) or a school. Another context is upscaling of complex intangible processes, as it is happening in technological spheres.

Another strategy in a coordinated lab setting like a workshop, is the integration of the participants' bodies. Through embodied making, ideas and interactions can be better experienceable for all people involved. A certain level of trust must be established for the integration of the bodies and it is not suitable for participants who are critical at the beginning. Moreover, the making of "Provotypes" (Boer and Donovan, 2012) can help to make speculative ideas more graspable. By integrating digital sensors and actuators into rapidly built artifacts, also a broader range of ideas can be expressed ("phygital" making).

How to overcome barriers for public and civic participation

To show how participatory materials can be used specifically to overcome barriers in different environments or local contexts, two case studies will demonstrate design strategies of how collaborative design can take place and show, what needs to be considered.

The two cases will show how participatory materials can work in different set ups. Both cases were developed in the context of university courses. The first one was conducted in a transformative semester project of a Master's program and will show various participatory experiences in a challenging local environment, with the aim of overcoming language barriers in particular. The second case was a workshop developed in an interdisciplinary BA program, in which complex technological relations were explained through tangible artifacts. The aim was to overcome knowledge and experience barriers.

First case study

The public intervention

Firstly, the six months long research project *Beyond Borders* (Strenger et al., 2024) at the University of Applied Sciences Augsburg (THA) within the MA study program Transformation Design will be introduced. This collaborative research endeavor was taken place in cooperation with the department for education and migration of the municipality of Augsburg. Additionally, it was collaborating with the primary and main school Löweneck which is located in the socially challenged district Oberhausen (City of Augsburg, 2023).

The project took place in the first half of 2024 and was concluded with a presentation in public space in front of the school. A total of four public interventions were developed as part of the project in order to better understand the participation behavior of the parents. The interventions can be understood as Make Tools for public space. A common thread runs between all the interventions: the participatory materials were designed to be non-verbal and playful. All had the intention of working with little written or spoken language as possible to overcome these barriers. The design decisions made to achieve this goal are shown in the detailed description of one of the interventions:

The intervention was called *Visual Space* (German title: *Sichtraum*). The main part of the intervention was a scaled-down and abstracted model of the school building and its surroundings. It was important to include the surroundings of the school as it is the waiting area for parents picking up their children after school. The intervention was structured "from the outside in": from the external effect of the school grounds to the internal emotion in relation to the institution.

On a symbolic basis, the first part of the intervention consisted of the task of choosing the size of a wooden figure – depending on how important the participant felt their role was in relation to the school. The small size stood for low importance, the large size for high importance. The figure could be placed closer or further away from the school – depending on how close or far away the participant felt about the school. The participants could use colored pins to mark where on the school ground they feel comfortable (green), uncomfortable (red) or neutral (grey). In the next step, the parents are provided with various tangible material samples as a further means of expression. The materials can trigger a double meaning: the actual association through touching the material and the emotional connection that arises through the past experience with the material. This added a deeper level of expression: Participants were asked to select the material that they emotionally associate with the school. The five different everyday materials should offer a broad spectrum of haptics and emotions that can be associated with school. As a final stage of the intervention, participants could write a message to the school, also in their native language, on a piece of paper.

The school model was located in public space in the waiting area in front of the school. This created a value-free space. By combining visual, spatial and textual forms of expression, the intervention enabled participants to articulate their feelings and perceptions about the school, break down emotional barriers and promote an inclusive, empowering school bonding effects.

When depicting the emotional and spatial relationship with the school, many participants chose large or medium-sized figures, which indicates that they perceive themselves as important in relation to the school

environment, although the figures on the school model are often placed far away from the school building. This discrepancy is particularly significant and indicates that the parents feel an emotional or physical distance from the school despite their perceived importance (Dertinger et al., 2024).

The choice of materials to express the perception of the school, reflects a variety of associations. The available materials were: brick, moss, absorbent cotton, pieces of a metal fence and wood fiber. The frequently chosen brick is directly related to the construction of the school building, which explains the larger selection. Moss, the second most frequently chosen material, was associated with nature and trees as well as with students cooking with vegetables. Absorbent cotton was associated with emptiness. Another parent responded to the choice of cotton by saying: 'I suspect that the pupils here at school are not currently being wrapped in cotton wool.' The metal and wood threads were not chosen. One participant justified his non-selection of metal with a reluctance to connect the school with a chain-link fence. The wooden threads were associated with chaos.

The diverse statements from the paper notes showed the prevailing feelings of gratitude, hope, commitment and care. It emphasizes the relevance of an appreciative and cooperative atmosphere within the school community. In addition, the children's willingness to participate, often led to increased involvement on the part of their parents, especially when there were cultural or language barriers.

Second case study

Participatory workshop

The second case study was a participatory workshop developed in a course called Participatory Lab within a BA study course called Creative Engineering at the THA. The program combines design with engineering skills. The aim of the interdisciplinary workshop was to give non-technical participants the opportunity to explore an emerging technology in more detail. The team decided to work on the socially and politically relevant technology "blockchain" as a workshop topic. The workshop *Unlocking the Blockchain* (Reinig et al., 2023) was aimed at young adults and students from non-technical degree programs.

The team planned and implemented the workshop by developing a larger selection of participatory materials: What is interesting here is that the intangible, technological processes are scaled up and equivalent forms are found. Paper cubes with yarn or Lego bricks in different colors are used to make the mechanisms and functionalities of the blockchain more tangible. Such tangible "mental models" help to make complex relationships discussable among several participants. The playful

nature of puzzles or serious game elements with Lego arouses interest in acquiring knowledge. The materials developed actively involved the participants. This meant that even rather unmotivated participants could be persuaded to take an active part in the workshop.

Another designerly approach was to compile a glossary with all specialized terminologies (nonce, hash value, miner, proof of work) which are needed to understand when working with blockchain. Food metaphors were used to make these terms easier and quicker to understand and remember.

The participatory materials – through the strategy of upscaled materialization and the usage of mental models – help to lower the threshold for learning complex technological interrelations. The materials helped non-technical savvy people to find their way into new and abstract areas of knowledge.

Conclusion

The participatory materials lowered the thresholds for taking part in a consciously designed set-up. The up- or down-scaling helped to make complex processes more graspable for participants. Even hesitant participants could get convinced to take part in a meaningful discussion. Participatory materials serve as an icebreaker to start a meaningful dialogue. The playfulness of the materials can get the dialogue going and lead to a serious discussion with in-depth arguments or lines of action.

In the first case study, the intention of participation was to improve the situation of the participants, especially the parents and through that the whole school family, most important the children. The aim was achieved to find out why there is hardly any parental involvement at this school: The parents needed informal points of contact to open up for other topics. Once the language barrier was solved, the openness of the parents was there. This willingness to make concessions can increase parental participation in the long term with new formats developed by the school.

At the same time, new approaches in the field of interventions (material approach, cultural and culinary identities, local beliefs) were tested in order to pass on these potentials of open, unbiased themes, to the school's directors and decision-makers of the school. In addition, all results were openly presented to interested peers in public space in front of the school. The documentation was published digitally with an open access license (doi.org/10.60524/opus-1929). In the end, all interventions and other Make tools for elementary school developed in previous projects were compiled in a modular and portable "Make school" toolkit (TFD-Showcase, 2024) which was also handed over to the municipality and interested peers.

In the second case study, the main goal of the participation was individual knowledge gain, empowering each participant in the way they intended: they could use the knowledge for their own benefit or interest. They

could invest in cryptocurrencies, explain the mechanisms of blockchain technology to their families or even start their own (business) idea based on this technology. On a broader level, participatory materials can enable digital literacy among non-tech-savvy actors.

For reflecting the dimension of assemblages again, the interventions operated in fluid and uncertain settings – the socially disadvantaged school or the digital literacy workshop –, showing how contextual forces (e.g. language, power dynamics, emotion) dynamically shape participation. Each participatory encounter is a temporary and situated configuration – a unique assemblage – through which knowledge, empowerment, and engagement emerge.

The work reflects how designerly tools create material-discursive assemblages that enable new forms of civic and educational participation. These assemblages break down traditional binaries (expert/non-expert) and make space for inclusive, co-created learning and action.

Participatory materials enable meaningful dialogues in various contexts. The usage of familiar, reproducible everyday materials such as paper, cardboard, yarn, wooden figures, pins or Lego bricks makes it possible to lower the thresholds. The materials enable an easier access to participatory processes, which leads to greater success: The processes gain more participants who are more diverse and therefore bring in different perspectives and represent various points of view. This even results in "participatory literacy", which is made possible by the participatory materials.

REFERENCES

Berlin Senate, & CityLab. (2022). *Gemeinsam Digital – The smart city strategy for the capital, Berlin* (p. 76). https://gemeinsamdigital.berlin.de/en/strategie/

Boer, L., & Donovan, J. (2012). Provotypes for participatory innovation. *Proceedings of the Designing Interactive Systems Conference (DIS '12)*, 388–397. https://doi.org/10.1145/2317956.2318014

Gaver, B., Pacenti, E., & Dunne, T. (1999). Cultural probes. *Interactions*, 6(1), 21–29. https://doi.org/10.1145/291224.291235

Illich, I. (1973). *Tools for conviviality*. William Collins Sons & Co.

Marres, N. (2012). *Material participation: Technology, the environment and everyday publics*. Palgrave Macmillan. https://doi.org/10.1057/9781137029669

Mattelmäki, T. (2005). Applying probes – From inspirational notes to collaborative insights. *CoDesign*, *1*(2), 83–102. https://doi.org/10.1080/15719880500135821 Morton, T. (2013). *Hyperobjects: Philosophy and ecology after the end of the world*. University of Minnesota Press.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.

Lavender, S. A., Sommerich, C. M., Sanders, E. B. N., Evans, K. D., Li, J., Radin Umar, R. Z., & Patterson, E. S. (2020). Developing evidence-based design guidelines for

medical/surgical hospital patient rooms that meet the needs of staff, patients, and visitors. *Health Environments Research and Design Journal*, *13*(1), 145–178. https://doi.org/10.1177/1937586719856009

Patterson, E. S., Sanders, E. B. N., Sommerich, C. M., Lavender, S. A., Li, J., & Evans, K. D. (2017). Meeting patient expectations during hospitalization: A grounded theoretical analysis of patient-centered room elements. *Health Environments Research and Design Journal*, *10*(5), 95–110. https://doi.org/10.1177/1937586717696700

Polanyi, M. (1958). *Personal knowledge: Towards a post-critical philosophy*. Routledge.

Polanyi, M. (1966). *The tacit dimension* (1st ed.). University of Chicago Press.

Reinig, N., Strang, J., Nouroozi, C., & Doll, F. (2023). *Unlocking the blockchain – Laughing, learning, and the future of technology: Project documentation participatory lab, summer term*.

Sanders, E. B. N. (2003). From user-centered to participatory design approaches. In J. Frascara (Ed.), *Design and the social sciences: Making connections* (pp. 1–8). CRC Press. https://doi.org/10.1201/9780203301302-8

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, *4*(1), 5–18. https://doi.org/10.1080/15710880701875068

Schubert, J., Ugur Yavuz, S., & Fuad-Luke, A. (2021). Procedural artifacts for design inquiry. *Disegno Industriale/Industrial Design (diid)*, *71*, 122–129. ISBN 9788832080506

TFD-Showcase (2024), https://showcase.tha.de/tfd/methodenkoffer-schule-machen (last view 10.4.2025)

City of Augsburg. (2023). *Structural atlas of the City of Augsburg 2023 (Strukturatlas der Stadt Augsburg)*. Office for Statistics and Urban Research, Department of the Mayor. https://tinyurl.com/vpnfbt2t

City of Bern. (2016). *Participatory planning process Schützenmatte Bern: Process documentation on the utilization & development concept*. https://synergo.ch/download/143/Schtzenmatte_NEK_2016.pdf

Strenger, C., Schubert, J., Mirtamizdoost, M., Nitzschner, M., Stromer, S., Mayer, M., Obermaier, P., Dertinger, Y., Götz, L., Potapova, N., Collisi, C., He, Y., & Schmutzler, I. (2024). *Beyond borders*. https://doi.org/10.60524/opus-1929

It's time to act

Empowering ageing, sisterhood identity, and legacy transmission through intergenerational community performance methods

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ABSTRACT

"Old woman? Who said that? We are still here!" is an intergenerational spectacle that premiered in October 2024 in Évora (Alentejo, Portugal), and counts with the participation of sixteen women on stage from 22 to 80 years old. Behind the scenes, there is a multidisciplinary team made up of 15 members, all teachers, researchers and students at the University of Évora. CHAIA is coordinator of this artistic participative based- research, embedded in the project *Age Against the Machine: European Solidarity Network for Older Citizens Rights* (2024-26), co-financed by the European Union under the programme CERV (Citizens, Equality, Rights and Values).

We engaged with an intergenerational group of thirty participants into a dialogue valuing individual singularities and collective identifications through sensitive listening, using participative theatre methodologies, and participative artistic actions which helped us to build a collaborative dramaturgy. There has been a political, ethical, social, and cultural dimension in our work, reflected in a performance that reveals poetically and transversally themes such as ageing, feminist care ethics, gender rights, embodied and performing heritage, the re-signification and connection with the land and Alentejo landscape and the deep relationship with the cycles of nature. This testimonial work of embodied knowledge of past and present memories holds the pride of a process of legacy transmission. The group was empowered through togetherness, team solidarity, inclusion, and active participation, as well as through a process of fearless curiosity, intimacy and sisterhood, with a sustainable long-term effect on their lives and their close communities.

KEYWORDS

Ageing, intergenerational performance, embodied heritage, gender rights, collaborative dramaturgy

Introduction

Age Against the Machine: European Solidarity Network for Older Citizens Rights (CERV, n. 101138625), is a co-financed European project that uses innovative methods, such as theatre and performing arts to address prejudices related to aging and social inclusion. It comprises a collaborative network of six European partners: Novi Sad Foundation: European Capital of Culture (Serbia, as coordinator of the project), Red Cross Serbia and Theatre Company Trupa Drž ne daj (Serbia), Teatr Brama (Poland), Nordisk Teaterlaboratorium Odin Teatret (Denmark), Comppagnia Il Melrancio (Italy), and the Centre of Art History and Artistic Research (CHAIA, University of Évora, Portugal). The project started in March 2024 and for two years, all partners will be involved in participative and intergenerational applied theatre methodologies for the goal of raising awareness about the existence of age prejudices and challenging discriminatory practices towards older citizens in Europe. In the first year, all partners have developed theatre co-creative laboratories with intergenerational groups to foster a dialogue among old and young people. It resulted in a public premiere of a performative presentation in October 2024 in all partner cities, with the active interaction and dialogue with the public and our local communities. From November 2024 to October 2025, we will hold five International Community Theatre Festivals in each partner city, where all the partners' performances will be presented.

Each partner researches and addresses the most critical and relevant issues at their national and regional level regarding ageism such as retirement issues and working rights, the aging body acceptance, love and sex, stereotyping and anti-ageing discourses in culture and media, among others. For our local rural region of Alentejo (Portugal), with more than 23% of its population over 65 years old (Eurostat 2020 – Aging Europe 2020), we decided to tackle issues related to the rural contextual background of many of our older citizens in the city of Évora, giving space to legacy transmission of heritage experiences, critical sustainable living and historical cultural conditions, traditions and discriminations in those rural areas. We also observed that many of our older participants – the majority of them women- suffered gender abuse in the past and at present involuntary isolation due to widowhood. Therefore, we decided that our local debate on mental health policies should be enriched with the reinforcement of a sisterhood identity tackling gender stereotypes, gender-based violence or the burden of gender family care. There is also the need to give visibility to the revindication of empowering ageing, especially community gender empowerment and sisterhood (independently of age differences), extending it to older citizens active social participation, active ageing, and well-being.

During six months, from April to October 2024, we delved into co-creative processes and a collaborative dramaturgy. We counted on the

collaboration of the Depart. Performing Arts, the Depart. of Visual Arts and Design, Arteria Lab (transdisciplinary research), and Évora City Council (Department of Youth and Sports). The Department of Youth and Sports became a community mediator and expert in health practices and it has a relevant role in the team. We started our activities weekly. We gathered 30 participants (among students and older people, between ages 22 to 80), from both genres. Three of the students have prior expertise as artists in scenic arts. Due to the required long-term commitment, the group dropped to 16 members, only women. Our multidisciplinary research team, behind the scenes, is made up of 15 members in charge of the creative participative research processes, artistic direction and dramaturgy, light, sound and audio-visual design, costumes and scenography, community mediation, communication, production and research coordination. It included teachers, researchers and assistants.

In our creative laboratory we have been producing reflections on participatory artistic actions of a performative nature in which the design of listening, sharing and collaboration runs along all process stages.

Participatory theatre: the poetic and the testimonial

The aesthetic, ethical and dramaturgical specificities of this artistic project is based on the processes of co-creation and participation of/ with/for the community (Nogueira, 2017; Bezelga, 2016; Cruz, 2021). The implemented approaches in our creative laboratory stem from the principles and methodologies of Community Theatre and participatory arts, through methods that are inspired by situated listening, the experience of being and being part of a locus in which the presence of bodies are mediums of thought in action, in an intense socio-cultural experience, of re-reading and desire, in constant questioning of the world, reconnecting the experiences of trauma and care. These encounters are characterised by key topics such as critical heritage, transdisciplinary dialogues, identity/alterity, experience, memory, choir, poetic image, multisensorialities, humour, affectation and collaborative dramaturgies.

There are no interdicts. Sensitive listening to the paths travelled always allows us to question who we are, who we are in our encounters with each other, what is whispered and what is revealed to us. They also occur in unhurried encounters, in sharing memories and feelings, and in the coincidences that arise. Discovering the nest in our own experiences, in the relationships we establish with what we have learnt and want to know. The reverberations that echo in us and *affect* us present themselves as possibilities for research and creation. What arose spontaneously in the context of creating a trusting, safe and respectful relationship through body action, play, small group exercises, and improvisation, gave access to memories, experiences and personal information that

made it possible to incorporate them into a fine exercise between singularities and collective experience. Memory as a central element in the construction, reconstruction and invention of a common path/project, even if imagined, was possible because of the intersubjectivities that arise from each individual memory, offering us an infinity of possible narratives (Hallbwachs, 2004; Bauman, 2003).

What emerged as a potential topic for collective identification, through sensitive listening and notation, remained in a state of latency, which allowed us to bring to life those collective identification topics as images for scenic creation. By valuing the singularities of each participant, and their individual poetic cultural experience, it is possible to reflect on the processes of alterity. According to Derrida "there is no difference without alterity, there is no alterity without singularity, there is no singularity without here-and-now" (Derrida, 1994, p. 51). In this sense, establishing a state of playfulness, all collaborations are seen as valuable. Working together is free of hierarchies and rich in negotiation and horizontal discussion, and the identity of each element is sought to be coined in the work.

We follow a process of constant negotiation within the group, retaining, discarding or transforming the ideas/forms found. What is retained/reconfigured in the various stages will later be organised and codified for the stage. The aim is a polyphonic identity that results from the simultaneous existence of heterogeneous elements that do not yearn for unity and harmony but rather the confluence and juxtaposition of distinct and multifaceted elements, voices, perspectives, discourses, memories, and cultures, where it was possible to find the lyrical, the poetic, the testimonial. Assuming ourselves as a collective body, accepting the dissensus along the negotiation, we explored the limits of the roles traditionally present in the theatrical performance, taking power away from the director's demiurgic role, moving on to the vision of creators/actors, with total responsibility for the whole process, reflecting a new status of co-creation.

Sisterhood identification: ageing pride, feminist care ethics, and gender rights

Throughout the creative laboratory, we observed that the core of participants that remained in the group were all retired women, the majority migrated during their young years to Évora city, from the hardships of Estado Novo rural villages. All married, half of them were now widows or separated. Therefore, we were confronted with a double violence: Woman/Old woman. On the one hand, and in their youth, they belonged to a vulnerable collective due to the change in its status as a domestic and professional productive force, always ruled by a strict patriarchy that restricted their freewill to lead their lives. On the other hand, at present, there is a tension between greater and lesser

vulnerability that goes from being an object of desire in their young years to being almost invisible. Socially, the old woman's body, being perceived as asexualized, without desire, also allows them to be exposed in a condition of less vulnerability.

There is also a reflective dimension produced through the theatrical metaphor. Through personal enjoyment, fulfilment, and the pleasure of playing, participants discover the ability to express themselves freely. Dropping reservations, we reduced the internalization of prejudices and the target of taboos. In the session "happy memory of their youth" we understood key-life individual moments that were defining their singularities and group convergences regarding youth hardships. At the performance, the scene "the works and the days", presents this collective sweet-bitter weight of the old times at the rural villages, with the marks and the fight against the destiny reserved for only women that is expressed in the prohibitions repeated a thousand times since a girl was born: "Show respect", "Don't talk back to your father, your brother, your husband". These are visions of bodies restrained, frozen, in a submissive black headscarf, with and lowered eyes, which insisted on lasting.

There is a poetics in which ethics and aesthetics are intertwined in the construction of a collective body, which is sought in the memories and embodied experiences of the participants. From the perspective of Care Aesthetics (Thompson, 2022), socially engaged participatory arts transform the qualities of these shared experiences into aesthetic qualities, valuing and supporting these individual and collective life experiences, because "We have us! And we feel all reflected!" Care is also an aesthetic of sisterhood and feminist care ethics (Gilligan, 2008), based on the intimate sharing of the "blood/life" cycle, which accompanies all women and is transmitted between the various generations, strengthening us. The scene "sisterhood caring" talks about women that give time, advice, comfort, and share experiences with other women. Women hold the ancestral know-how of natural remedies, and ancestral and magical blessings. Blood also unites us in the secret of the first menstruation, birth and abortion. With a restorative tea, these women approach and offer to the public the blessings of unconditional care. However, a message is clear regarding the burden of gender informal care: "we don't let people take care of us!"; "Sometimes we don't let them and we don´t ask!"; "What about those who want to take care by force? Taking decisions about our lives in their own hands? "To take care of others, we have to take care of ourselves first!". These strong statements expressed on scene emerged through guided conversations and improvisation work, which led to spontaneous performative interactions about the concept of caring and its impact on their lives with poems, jokes, stories and secrets (Figure 1).

The final performance script is structured around the concept of the Journey as a metaphor for life. Taking as a motto the participants'

curiosity, thirst for freedom and desire to know and experience, with the full awareness that life is not over yet, even though many are currently experiencing being alone for the first time. The performance begins with the departure on a journey, still staggering and disoriented, continuing with fear of what will happen next. At the end we leave with the enthusiasm of the discoveries that will emerge and with the confidence of the battles won, the experience that has been accumulated and the certainty of those who will no longer let ourselves be told what to do. This is symbolized by the removal of layers of clothing along the performance, until everyone is left with their swimsuits and their group choreographic water dance, liberated from any complexes about their bodies exposed in public: "Now we are strong. Let's go, together!" It's time to live and time to act. We have Hope!

Embodied knowledge and legacy transmission

In this community project through performing arts, it has been relevant the intergenerational transmission of intangible embodied heritage. Our co-creative processes offered the possibility to share different layers of transdisciplinary embodied memories and knowledge. The presence of the participants' bodies were mediums of "thought in action". We experienced the presence of bodies in relationship with each other, with their physical differences, temporalities, and embodied roles played over time. Younger generations were sometimes not keeping up with older generations' memories and vital experiences.

> In dance, we observe how participants move differently according to generational differences. All the older ladies were dancing with the same type or rhythmic movement. At the end, when we commented on the wishes they were holding in their hearts while dancing, the older women spoke about 25th April in Portugal, and the importance of freedom and peace in society.
>
> (Process Diary, 24.04.24, p. 4)[1]

However, we could verify common life-features independently of their age gaps, such as the fact that all of them travelled extensively across Portugal's geography, or the remarkable memories in their youth connected to the countryside, nature, family celebrations and gatherings, or the strong relationship with the family ties of parents, grandparents and siblings. Also the relationships of women care (mothers-grandmothers-daughters), and their right to claim an active voice in love relationships, brought closer both generations. The challenge of bringing their personal

1 Cf. https://www.ageagainstmachine.uevora.pt/assets_research/Process%20Diary_S3_24.04.pdf)

Figure 1 – May Workshop, Session 7 - A Family Day (Sara Romão, 2024).

Figure 2 – April Workshop, Session 3 - Individual Body in the Collective (Isabel Guedes, 2024).

memories, experiences and future wishes to the performative exercises, allowed them to relate to each aspect of their own lives in a more tangible way and produced a collective body that was, progressively, freeing itself in movement, and voice. It moved from individual experiences to collective identification. It was an evolution from bodies that were afraid of expressing themselves to a feeling of collective freedom and ease (Figure 2).

Participants felt the need to pass on this embodied knowledge and narratives of which they were witnesses and protagonists. They gave visibility, through the practice of theatre games, of a precious social and cultural archive: labour bodies (harvesting scenes), subversive bodies (in the management of family relationships), gender bodies (pregnancy, birth and resistance). This process is also connected to the concept of culture as performance (Fisher-Lichte, 2004, p. 145) in the sense that our

cultural expressions are always based on a performed ritual or relation. In our case, theatre served as a means of representing it. Performance frees and concretizes the body as the material, par excellence, of performative artistic creation. This body as an archive of memories, experiences, legacies and knowledge is described by Andre Lepecki as a source of knowledge and practice that can be transmitted from body to body, especially in the process of documentation and *archiving*.

> (...) the body as archive re-places and diverts notions of archive away from a documental deposit or a bureaucratic agency dedicated to the (mis)management of the «past». (...) Like the body, like subjectivity, the archive is dispersion, expelling, spilling, differentiation; a foaming and a forming and a transforming of statements into events, of things into words and of virtuals into actuals (and vice versa).

> (Lepecki, 2010, p. 15)

In the case of their labour bodies, we recreated bodily actions in the rural context and the rural work in the fields through movement mimesis. We observed the transformation of a learning process of mechanical and choreographed movements that awaken old traumas or painful memories, into a dance. The ladies taught the mowing movements to the younger actresses/students, who had no physical memory of this practice. Simultaneously, this patrimonial bodily knowledge transmitted from body to body, while these gestures were imitated, was also about passing on a legacy that was both historical, cultural, and generational.

> We had several types of harvest: olives, rice, blackberries and flowers. (...) By imitating movements, the younger participants learn traditions from the past that no longer are present today (...).

> (Process Diary, 29.05.24, pp. 3-4)[2]

This gesture of transmission thus opens space for the process of delegated performance (Jones, 2011) and re-enactment of traditional practices. From the moment that this process of transmitting labour practices associated with harvesting itself becomes a dramaturgical image, it is assumed that there is a process of delegation of these gestures to the bodies of the performers as well as a re-enactment of these same practices on stage.

> The harvest was one of the scenes that produced a choreographic image in two intersecting lines. This image had much power, as did the grapes harvesting and the power of the sound of the stamping of the feet. Another powerful image is the olives

2 Cf. https://www.ageagainstmachine.uevora.pt/assets_research/Process%20Diary_
S7_29.05.pdf

> harvesting, when they are placed in a triangle and the image of offering the baby to the moon.
>
> (Process Diary, 05.06.24, p. 5)[3]

This urgency of transmission reflects a fear of forgetting and losing not only their ability to transmit but the amount of time and opportunity they had for this to happen. We observed the old ladies' pride in passing on and caring for preserving a memory and a legacy. A memory that was talking about a rural community united by manual work, the soil and the countryside. The fields needed the collective, their music, songs and food.

> They were proud to pass on this ancient knowledge to new generations. Cacilda - one of the participants, at the end of the session said "I'm happy that this knowledge doesn't die with us". Therefore, they felt an urgency to communicate both bodily and oral knowledge, thus, as knowledge transmitted from woman to woman (knowledge enclosed within the feminine world).
>
> (Process Diary, 05.06.24, p. 3)[3]

This factor leads us to Diana Taylor's concepts of "archive and repertoire", but above all to this corroboration of performance as a form of transmission because cultural memory is, among other things, a practice, an act of imagination and interconnection (Taylor, 2003, p. 82). Taylor also refers that the issue of transmission becomes one of the main points in the permanence of this memory. In this act of transmission of these rituals and gestures, by repeating their repertoire, they are giving visibility to an archive in their own bodies.

A collaborative dramaturgy

Throughout the creative laboratory, topics emerged, arising from discussions with the participants at the sessions about the project's objectives, sometimes arising from inducing materials, such as songs, poems, drawings, sharing of memories and personal stories, or revealed secrets, which provided starting points for improvisations.

The building of a collaborative dramaturgy started with three main scenes: the "thief-fear scene", which came from a traditional Alentejo song shared during the laboratory, symbolically referring to the vulnerability of older adults and their fears; the "tea scene", based on the concept of forgiveness and unconditional care; and the "headscarves and gowns scene", discussing the lack of freedom and the headscarf's symbolism as a carrier of prejudice regarding women in tradition. We continued with the construction of the scene related to "sisterhood caring" as a

3 Cf. https://www.ageagainstmachine.uevora.pt/assets_research/Process%20Diary_S8_05.06.pdf

gear of group bodies in a harmony of movements, actions, gestures, words and sounds. Other scenes arrived during the process: "between a husband and a wife do not interfere" dealt with domestic violence and group protection. In "the works and the days" through ancestral traditions and the connection to the Earth, the deep relationship with the cycles of Nature are vivified. There is wisdom in the gestures that come from the hard work in the fields. Therefore, the local environment and the relationship with the land is always present during the performance (Figure 3).

As a particular ecosystem. This is why, in the scenography, a central hanging tapestry becomes the central element around all the scenes. A tapestry screen weaved by the participants representing the colours of Alentejan countryside. Sustainability was also explored by and we brought to the stage the relationship these women have with the land, the labours of the long days, which echo the tradition of "Cante Alentejano", as well as the vernacular knowledge and skills about health remedies, ancestral forms of care and living, as legacies for future generations from an ecological perspective.

During the creative sessions since July until October 2024 we worked in greater depth on the dramaturgical sense and the sequence of scenes, the cutting out of spoken text, the option for the presence of chorality, the transitions between scenes, the rhythm changes, the body occupation of the scenic space, the props experimentation and with the different layers of costumes, from trench coats to swimsuits (Figure 4). In a collaborative way we chose and distributed the lines in each scene, assuring that all the participants are represented. Attention was also given to the creation of atmospheres using simple scenic devices, the definition of the various moments of interaction with the audience and appealing to their participation (e.g. taking a position on what is happening in the scene; sharing a cup of tea with the actresses, getting out of the chair to dance). The last details of the performance were related to the final presentation of the close script to all participants and choosing with them the songs that appear throughout the performance, the costumes and stage accessories. Moving on to the more technical elements, we had to count with the integration of voice-off and soundtrack and in the adaptation to the light design. Finally, close to the end, the whole group met to propose different ideas for the title of the performance.

Discussion and conclusions

Part of our research process is based on the disclosure of each session according to sensitive listening of the topics developed in the prior one, and how each session was unfolding in relation to each other. All the sessions were registered and collectively documented in a Process Diary,

Figure 3 – Play Premiere, School of Arts (UÉvora), October 2024 (Isabel Afonso, 2024).

Figure 4 – Play representation at Educative Cities' Week (Évora), November 2024 (CMÉvora, 2024).

emphasizing the main topics, the participants' responses and evolution, team impressions and observations, or the dialogue and transversality of themes and creative and human relationships developed. In this sense, a Process Diary is relevant for a methodological evaluation for all the project partners. The participatory creative processes brought more questions to the fore and different possibilities to the research practice and simultaneously, the research questions also fed the creative and artistic decisions. Therefore, we detected how our research approach and the participatory and community processes were nourishing each other.

Regarding the process of knowledge and legacy transmission, we observe how this project is a case-study in which we witness a body of archived memories in its corporeal and physical dimension, where the "body" appears as the place of this process of archiving memories, not

only of those that are recovered, but also those that are transmitted, and the new ones that are created. In this context, the "body" appears as a resource and essential tool in the transmission process, specifically in a knowledge transmission from body to body and not so much through the technological registering of these memories.

One of the most significant impacts of this project is the sense of sisterhood among participants and research members. We had the opportunity to get to know more about each other, to connect and learn about our stories and wishes, and how transformative these type of artistic projects are in the participant's personal emotional transformation, with an impact in their close families, friends and local communities. This resulted in an empowering process of these older ladies based on a sense of protection and togetherness, intergenerational solidarity, social inclusion and active participation, as a process of intimacy, individual respect, and collective identity.

REFERENCES

Bezelga I. (2016). As abordagens participativas do teatro e comunidade na formação em Teatro. *Mediações*, 4 (2), pp. 51-66.

Cohen-Cruz J. (2020), Beyond the 'Other': Seeking commonality in a divided world. Cruz C., Cruz H., Bezelga I., Falcão M. and Aguiar R., (eds). *A Busca do comum - práticas artísticas para outros futuros possíveis*, pp. 16-20: i2ADS/UP.

Cruz, H. (2021). *Práticas artísticas, participação e política*: Colibri.

Derrida, J. (1994). *Espectros de Marx. O estado da dívida, o trabalho do luto e a nova Internacional*: Relume.

Fischer-Lichte, E. (1998). Performance e cultura performativa: o teatro como modelo cultural. *Comunicação e Linguagens – Dramas*, 24, pp. 143-169.

Foster, H., (2004). The archival impulse. *October* 110, pp. 3-22.

Gilligan, C. (1993). *In a different voice: Psychological theory and women's development*: Harvard University Press.

Halbwachs, M. (2004). *A memória coletiva*: Centauro.

Jones, A. (2011). The artist is present: Artistic re-enactments and the impossibility of presence. *TDR/ The Drama Review* 55 (1), pp. 16-45.

Lepeki, A. (2010). The body as archive: Will to re-enact and the afterlives of dances. *Dance Research Journal* 42 (2), pp. 28-48.

Nogueira, M. (2017). Teatro e comunidade: A experiência brasileira. H. Cruz, I. Bezelga, P. Rodrigues (Org.) *Práticas artísticas comunitárias*. (11-26): Pele/CHAIA.

Schneider, R. (2011). *Performing remains: Art and war in times of theatrical reenactment*: Routledge.

Taylor, D. (2003). *The archive and the repertoire: Performing cultural memory in the americas*: Duke University Press.

Thompson, J. (2022). *Care aesthetics - For artful care and careful art*: Routledge.

Inclusive modularity

A case study in a multicultural typography classroom

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ABSTRACT

Typography carries and conveys a multitude of cultural ecosystems simultaneously. In that sense, it functions almost as an assemblage of periods, places, and practices. That happens due to the script's heritage, which evolved by the hand of different communities through time, and how we interact with glyphs to portray meaning. However, not all fonts we use today can be adapted into different writing systems, revealing a lack of inclusiveness in favour of a Latin script prevalence. Modularity in typography, taking us back into structural shapes, may work as a bridge between scripts. The fact that it functions as a flexible 'open work' that can be changed and manipulated by different people, means that it can also be adapted into other languages and scripts. Thus, it may foster inclusiveness when learning and working with typography. In a multicultural classroom environment, Typography students with little to no background in the field were challenged to approach modularity with Bruno Munari's *ABC Con Fantasia* (1960). Munari's modularity, which carries its own significance, is used in this context to create a transcultural learning experience. The exercise stipulated that each person could manipulate the paper shapes to form sentences, assembled into typographic compositions. Being an in-class exercise, students were exposed to the challenge of adapting shapes to different scripts. Learning and sharing challenges with other people can smudge borders and work towards more equity and inclusive futures for design practice. Typography, through its power to connect people, plays a critical role in this meaningful experience.

KEYWORDS

Modular typography, writing systems, multicultural classrooms, inclusivity, pedagogical practices

Introduction

In a globalized world, universities serve as platforms for integrating multiculturalism, bringing together students from diverse nationalities, traditions, and, consequently, artistic and design influences. This rich diversity enhances the educational experience, while also presenting unique challenges in creating inclusive learning environments. One key challenge in multicultural design classrooms is ensuring that all students feel represented and engaged, especially in subjects like Design History, which, in Portugal, is framed through a Western perspective. In addition to the theoretical nature of the content, which often proves less engaging for design students, this Western-centric focus can alienate individuals from other cultural backgrounds, making it even harder to cultivate meaningful engagement and inclusion.

However, certain topics within Design History, particularly in multicultural classrooms, such as the development of writing systems, present opportunities for broader cultural integration. The evolution of alphabets that stemmed from the Northern Semitic script offers a valuable bridge to engage students from diverse, non-Western backgrounds, allowing for the acknowledgment of their cultural heritage within the design narrative.

Exploring how pictographs have evolved into writing, rebus, logograms, ideographs, and syllabary, creates an opportunity for a diverse classroom, where students from all over the world can feel included in history lessons. By examining the origins of various writing systems, students see their own cultural histories represented. Allowing them to critically analyse and present contemporary design artifacts of their choice further fosters this sense of inclusion. When explored in depth, these topics can cultivate a more inclusive and enriching learning environment, helping international students recognize their own histories within the curriculum. Bridging this gap requires a more inclusive approach, one that acknowledges multiple design histories and perspectives, enriching and integrating the learning experience.

Building on the inclusive teaching methodology explored in history subjects, other exercises are implemented across various curricular units, promoting a broad approach that continues to integrate and explore diverse cultural backgrounds in the classroom.

Echoing Bamford and Pollard's (2019) concerns about students' perspectives on their higher education journeys, several adjustments have been introduced in bachelor's and master's design programs at IADE, Faculdade de Design, Tecnologia e Comunicação da Universidade Europeia, in Lisbon, Portugal. As part of the academic model adopted by this school, brief surveys are conducted, serving as a crucial tool for assessing the learning experience, knowledge acquisition, and the effectiveness of teaching methods. These surveys provide direct student feedback, highlighting strengths and pinpointing areas in need of curricular adjustments. Furthermore, by considering the diverse

backgrounds and expectations of students, these questionnaires help shape pedagogical strategies that promote a more inclusive and effective learning environment. Continuous analysis of this data contributes to the enhancement of teaching quality, fostering a dynamic academic atmosphere that aligns with the evolving demands of design education.

Modular typography exercise

The case study of this research is based on a modular typography exercise launched within an English-taught multicultural typography class. With the designation of Typography, Image, and Visual Composition, the class comprised international students from different countries, such as Bulgaria, Italy, Lebanon, Nigeria, Norway, Pakistan, Russia, Spain, Chile, and Syria. It is worth noting that most people did not have a communication design background, coming from different fields of study.

The exercise was launched in October 2024 and lasted four weeks. It followed an immersion in the history of writing and how modern writing systems are a blend of different places, periods, and practices. The goal was for the students to learn that typography, through its rich history and continuous practice, can smudge cultural barriers, portraying what Blakenship (2003, p. 60) considers a "celebration of humanity". In fact, as Santos (2019, p. 76) describes, "typography has been at culture and written communication's service, responding to the languages, cultures and societies' evolution stimuli". Societies are not 'closed' entities, subjected to outside permeation and influence. That means that the way we all learn, teach, and express ourselves through visual shapes is also a result of a transcultural assemblage occurring over time. Learning about the history and practice of typography helps us, to some extent, explore our own intricate historical journey.

From kick-off to in-class presentation, the project encompassed a total of four classes. Of those, two were tutoring sessions dedicated to the manipulation of the modules, with in-class feedback. Revolving around Bruno Munari's *ABC with imagination* (1960), the briefing called for the creation of a typographic composition made of a sentence or isolated words, all formed with the original modular shapes. The students could also use the modules to create shapes that fitted their design concept. The choice of modularity is due to its approachability and flexibility, despite its seeming limitative at first glance. As Willen and Strals (2009, p. 63) put it, "in spite of the constraints, new and surprising letterforms can be built with modular elements". Munari's modularity, in particular, stems from his innovative pedagogic practice, which revolved around the development of creative processes from infancy. His didactic design approach focused more on the design flow itself, reflecting an influence of different cultures (Orlandi, 2010).

All students were provided with a set of paper modules and instructions to create and deliver a final A3 poster with the typographic composition, accompanied by a description of the creative processes and applied methodology. Moreover, they were invited to write in their own languages and writing systems, further experimenting with the potential of modularity to create glyphs. The design process was divided in two main phases, with the first consisting in the manual manipulation of the paper shapes, and the second with the digital manipulation through vectorization techniques (Figure 1). The primary goal of the exercise was to experiment with the fundamental structure of letterforms by creating letters from its utmost roots, i.e., the most basic shapes one can think of.

Challenges and outcomes

Creating typographic compositions for the first time, or with little background in communication design, might prove to be a challenging experience. The idea of developing such work to be printed and presented on a poster looks overwhelming at first sight. Despite these difficulties, composing the letterforms individually and then developing words seems to help build awareness regarding form, rhythm, and visual balance. The students took time creating each letterform by experimenting with variations to choose those that worked visually better. By doing that, they had the opportunity of, as Martins et al. (2019) argue, forming relationships between all the modular elements. It is also worth noting that the shapes were printed in different colours, to ease the building process.

By manipulating the shapes inside the classroom, the group witnessed the challenges of adapting the original *ABC with imagination* to different writing systems, such as Cyrillic and Arabic. Despite its modularity, Stöckl's (2005) microtypography in this context was limited, as shapes were created with the modern Latin alphabet in mind – i.e., an array of 26 letterforms, without accent marks, ligatures, or other glyph variations. For that reason, European languages adding glyphs to the Latin alphabet, either of Romance, Germanic, Slavic, Celtic or Finnic heritage, end up being harder to work with. By looking at the provided kit, one can immediately understand that creating shapes just as ~ or ^, among many others, may be demanding. Even Italian, Munari's native language, needs grave accents and apostrophes in its written form, albeit less than other romance languages.

That framework fuelled reflections on how not all fonts we use today are adapted to languages using 'non-standard' glyphs, let alone entirely different writing systems. It also demonstrated what Gorter and Cenoz (2024) consider as the power that English language exerts over other state languages or minority languages. With the workability of modular

Figure 1 – Vectorization process.
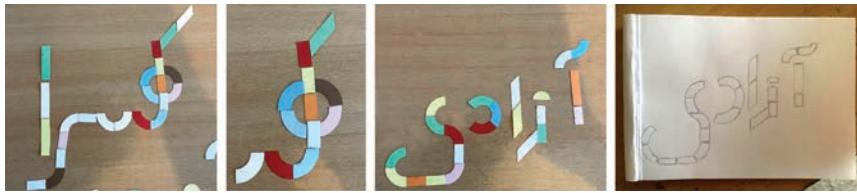
Figure 2 – Urdu words with the Arabic writing system.
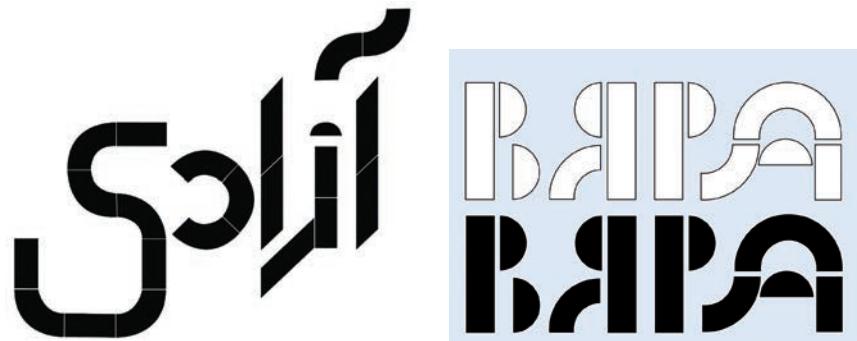
Figure 3 – Left: Vectorized Urdu word (azaadi), meaning "freedom". Right: Vectorized Bulgarian word (vyara), meaning "faith/belief".
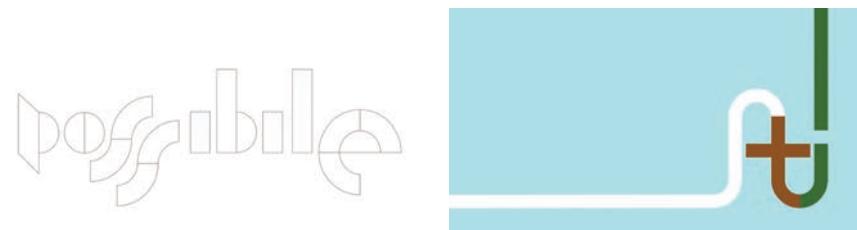
Figure 4 – Left: Vectorized Italian word (possibile), meaning "possible". Right: Norwegian word sti, meaning "path" or a "small road in nature".

systems, however, that issue could be creatively addressed. The most challenging observed cases were those of students writing in the Urdu (Figure 2), Bulgarian (Figure 3), and Russian languages. Their experiments took longer than those using the Latin alphabet, but they were nonetheless able to find solutions.

Another feature of the exercise was that the students had to develop the

text idea themselves. That is, the words in the typographic compositions were not chosen randomly but rather expressed a relevant concept for them. Typographic meaning was a relevant factor in this process, with Spitzmüller (2022, p. 918) defining it as the "procedural result of social practice enacted in interaction". It is thus possible to observe concepts related to different cultures and sociocultural contexts. Some compositions conveyed the notion of freedom or faith, while others delved into character traits and even nature. In that sense, the writing systems themselves, through the different languages, were a means of portraying identity and heritage (Figure 4).

Assessing the academic experience

As part of the University Academic Model, a survey was conducted to gain a comprehensive understanding of how students experienced pedagogical practices implemented in classes. The primary objective was to explore how students' diverse cultural backgrounds influence their learning, engagement, and approach to typography in a multicultural classroom setting. Specifically, it aimed to determine whether adapting exercises to diverse cultural contexts contributes to a more enriching and effective learning experience.

The survey consisted of seven questions designed to assess various aspects of the students' backgrounds and their interaction with the subject matter. These questions addressed aspects such as nationality, prior knowledge of the history of writing and modularity in typography, and familiarity with Bruno Munari's work, especially his *ABC with Imagination*. The survey also explored students' choices of writing systems for the exercise and asked about the significance of using their own native writing systems in the project.

The class consisted of 28 students, representing a diverse mix of cultural backgrounds and experiences. With 19 responses, the survey was answered by more than 60% of the class – an adequate representativeness. The responses provided a first valuable insight into the different perspectives and experiences, shedding light on how cultural diversity influences engagement with typography exercises.

Nationality and background knowledge on the history of writing

The respondents where from Pakistan, Austria, Russia, Bulgaria, Brazil, France, Slovenia, Syria, Norway, Chile, and Luxembourg. This cultural variety provided a rich context for the survey, offering valuable insights into how diverse cultural perspectives influence the practice of typography.

When it comes to students' prior knowledge on the history of writing before attending the typography class, the ratings varied. Most students rated their knowledge around 3 or 4 on a scale of 1 to 5 (where 1 = "I had no knowledge at all" and 5 = "I already knew most of the content taught"), indicating a moderate understanding of the subject. However, a few students, including those from Austria, Norway, and Pakistan, rated their knowledge at 1 or 2, suggesting a lower level of familiarity with the topic prior to the class.

To draw more solid conclusions from this data, it would be essential to cross-reference the students' ratings with their academic backgrounds. At this stage, the data only provides a general indication of each student's knowledge on the subject matter.

Familiarity with Bruno Munari's work, his books or his methodologies and their impact on design before attending this Typography class

Students' familiarity with Bruno Munari, his books or his methodologies varied significantly. Most respondents (13 out of 19) stated that they were not familiar with him or his work before attending the Typography class. This suggests that Munari's approach to modular typography was new to most students in the class.

A smaller group (3 out of 19) mentioned that they had heard of Munari but were not familiar with his work in detail. This indicates some prior awareness but not an in-depth understanding of his books and methodologies.

Other 3 students (one Italian, one Pakistani, and one Luxembourgish) reported being familiar with Munari's books and methodologies before the course. Given Munari's strong influence on design education, particularly in Italy, it is not surprising that one of these students was Italian.

This data highlights the importance of introducing Munari's work in an international classroom, as many students had little to no prior exposure to his contributions to typography and modular design.

Familiarity with ABC with Imagination across nationalities

Most students (11 out of 19) were unfamiliar with *ABC with Imagination* before the Typography class, highlighting the book's limited presence in design education globally. Only two students, an Italian and a Pakistani, knew the *game*. Five students (two from Russia and one from Austria, Chile, and Pakistan) were unsure if they had encountered it, suggesting exposure to similar concepts. These findings emphasize the value of integrating *ABC with Imagination* into the curriculum to introduce students to experimental typography and modular design.

Prior knowledge and exposure to modular typography

The survey revealed that while some students were already familiar with modular typography, others encountered it for the first time in class.

Students from Russia, Italy, Bulgaria, Brazil, France, Slovenia, Syria, Norway, Chile, and Luxembourg had prior knowledge, with explanations varying: a Russian, a Luxembourgish, and a Syrian student learned it at university, a Bulgarian student discovered it during Typography classes, and the Brazilian respondent studied it in a structured way at university. The Norwegian student found inspiration on Pinterest.

Conversely, students from Austria, and Slovenia were unsure about their familiarity, and some had no prior exposure at all.

Pakistani students showed the greatest national variation: one was familiar with modular typography, one was unsure, and another had no prior exposure.

Writing systems used in the exercise

The survey explored which writing systems students used in their Modular Typography exercise. The responses reveal a strong preference for the Latin alphabet but also highlight the presence of Cyrillic and Arabic users, displaying a variety of linguistic backgrounds in the class.

Students from Russia and Bulgaria showed a preference for working in their native Cyrillic script, while a Pakistani student also used Cyrillic. Arabic was used by another Pakistani student. These responses suggest that some students sought to experiment with writing systems beyond Latin, incorporating elements from their cultural or linguistic heritage.

Most students chose to work with the Latin alphabet. Since Latin is widely used in design and typography education and is the native script of almost half the participants, its prevalence in the responses is unsurprising. Some students might have opted for it due to its broader applicability in professional and academic contexts.

In conclusion, Latin was the dominant choice, reflecting its global influence in typography and design. Cyrillic was represented by students from Russian and Bulgarian backgrounds, as well as one Pakistani respondent, indicating an interest in exploring diverse typographic structures. The Arabic alphabet is observed through the work of another Pakistani student.

The distribution of writing system choices does not always align strictly with nationality, suggesting that students may have either experimented with different scripts or worked in a language they were more comfortable designing with.

Importance of using the national writing system in the exercise

The responses varied from 1 (not important at all) to 5 (extremely important).

Students who rated it 5 (from Pakistan) enjoyed the project and the creative possibilities of using shapes to form text.

Students who rated it 4 (from Russia, Italy, Brazil, Norway, and Pakistan) valued the exercise for connecting with their cultural roots or exploring new possibilities, with the Brazilian student highlighting the flexibility of design across languages.

Students who rated it 3 (from Russia, France, Syria, Bulgaria, and Chile) found it interesting, with some preferring to explore their native language or focusing on the artistic aspects rather than strict functionality.

Students who rated it 2 (from Slovenia and Bulgaria) preferred the Latin alphabet, seeing it as an opportunity to explore it more deeply compared to their native script or language.

Students who rated it 1 (from Austria and Pakistan) felt the exercise was less relevant due to their writing system being similar to English or because they wrote in English.

To conclude, the significance of using the national writing system depended on cultural background, with some valuing it as a cultural expression and others focusing on creative exploration or practical reasons.

Conclusions

This case study emphasizes the potential of modular typography as a powerful tool for fostering inclusivity and cross-cultural learning in a multicultural design classroom. By leveraging Bruno Munari's modular approach, students from diverse cultural backgrounds were able to engage with typography in an experimental and culturally meaningful way. Modularity provided a flexible framework that allowed students to explore typography beyond conventional writing systems, fostering creativity and promoting the development of new typographic compositions.

Learning typography through the manipulation of basic shapes encourages students to create diverse solutions, while simultaneously raising awareness of the lack of inclusivity in font design despite the rich, transcultural evolution of writing systems. By exploring modular typography, students gained a deeper understanding of the modular structure of letters, the possibilities of recombining shapes, and the vast creative potential this method offers. This approach not only promotes

creativity through manual and digital techniques but also encourages the exploration of typography's diverse cultural heritage.

The students' varied experiences with scripts like Latin, Cyrillic, and Arabic revealed both the challenges and opportunities of adapting modular typography to different languages. Despite facing difficulties when working with non-Latin scripts or even with the variety of glyphs added to the Latin script, the exercise demonstrated how modularity can transcend cultural boundaries, allowing for the expression of identity and heritage through design.

Moreover, the survey provided valuable insights into how cultural diversity influenced engagement and learning outcomes. The varying importance placed on using native writing systems reflected personal connections to cultural heritage, as well as the desire to explore new typographic possibilities. The survey underscored the significance of adapting exercises to diverse cultural contexts, showing that such practices contribute to a more enriching and inclusive learning experience.

In conclusion, modular typography not only served as an educational tool for exploring design fundamentals but also facilitated a deeper understanding of typography's transcultural potential. The exercise demonstrated how design practices can be enriched by acknowledging and integrating diverse cultural perspectives, fostering a more inclusive and equitable approach to design education.

The study's findings were supported by an adequate response rate, with 19 out of 28 students participating. In future academic years, the intention is to expand the survey, gather more data, and further explore how modular typography can promote inclusivity and cross-cultural learning in design education.

REFERENCES

Bamford, J. & Pollard, L. (2019). *Cultural Journeys in Higher Education*. Emerald Publishing.

Blankenship, S. (2003). Cultural Considerations: Arabic Calligraphy and Latin Typography. *Design Issues, 19*(2), 60–63. DOI:10.1162/074793603765201415

Gorter, D., & Cenoz, J. (2024). The Visibility of Minority Languages. In *A Panorama of Linguistic Landscape Studies* (pp. 174–223). Multilingual Matters & Channel View Publications. https://doi.org/10.2307/jj.6947033.11

Martins, T., Rebelo, S., Bicker, J., & Machado, P. (2019). Building Typefaces as Programs: A node-based approach for modular type design. In L. Moreira & M. Sanches (Eds.), *9th Typography Meeting, Book of Proceedings/Nono Encontro de Tipografia, Livro de Atas* (pp. 64-78). ATIPO, Associação de Tipografia de Portugal.

Orlandi, A. E. C. (2010). Experimental experience in design education as a resource for innovative thinking: The case of Bruno Munari. *Procedia - Social and Behavioral Sciences 2*(2), 5039-5044. https://doi.org/10.1016/j.sbspro.2010.03.817

Santos, T. (2019). Typography as a mediator of art, space, memory and presence on toponymy. *Legado de Arquitectura y Diseño, 14*(26), 76–96. https://doi.org/10.36677/legado.v14i26

Spitzmüller, J. (2022). Approaching typographic variation. *Vestnik of Saint Petersburg University Language and Literature, 18*(4), 910–928. https://doi.org/10.21638/spbu09.2021.417

Stöckl, H. (2005). Typography: Body and dress of a text — A signing mode between language and image. *Visual Communication, 4*(2), 204–214.

Willen, B., & Strals, N. (2009). *Lettering & type: Creating letters and designing typefaces*. Princeton Architectural Press.

Acknowledging gentrification through media art

A bibliometric review and research agenda

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ABSTRACT

Gentrification has gained significant attention in recent years due to the noticeable demographic, economic, social, architectural, and infrastructure changes occurring in urban areas. These transformations are often driven by an influx of people with higher socio-economic status, who may completely or partially replace the working-class population. Media art has emerged as an important medium for representing the complex social and cultural processes associated with gentrification. This study examines the research landscape of media art concerning gentrification by conducting a comprehensive bibliometric analysis of the field over the past 30 years, supplemented by data visualization. The analysis of the 80 data consisting of high-quality peer-reviewed publications retrieved from the Scopus and Web of Science databases reveals that this scientific field is relatively unexplored but has gained a growing international interest during the past decade. This interest is reflected in the attention given by various international journals, conferences, and books. Results also suggest that seven countries are leading the development of the field worldwide, accounting for more than three-quarters of publications. The evolution of themes on the subject is identified for distinct periods, and key themes are discussed according to their relevance and development degrees, concluding several future research directions that need critical international attention to advance this scientific field.

KEYWORDS

Gentrification, media art, co-creation, art-based research, community

Introduction

Gentrification and local community

Gentrification has come to the fore in recent years through the representative occurrence of demographic, economic, social, architectural and infrastructural changes in urban areas occupied by the influx of people with higher socio-economic status, replacing or displacing (totally or partially) the working class (Raya-Tapia et al., 2024). The original term *gentrification*, coined in 1964, is attributed to the British sociologist Ruth Glass (1912-1990) as a process of changing the urban landscape by the occupation of the middle and upper middle classes in the center of London through the expulsion of the local community, mainly the working class (Smith, 1982, 1996).

This process has been consolidated as a social phenomenon, based on the analysis of Scottish geographer Neil Smith (1954-2012), who argues that the arrival of high-income earners in some urban regions is due to the private interest of capital investment in the respective geographical areas, coming from various financial organizations, such as construction companies, as well as real estate, commerce, among others, in the process of inverted calculation, that is, it is first devalued to later become an investment that focuses on attracting residents that enable increased financial returns (Alcântara, 2018).

American sociologist Sharon Zukin (1982) combined the *sociocultural* and *economic* perspectives in this context by investigating the transformation of old warehouses and industrial buildings in New York's SoHo into residential lofts and studios by various personalities in the arts (among other intellectuals). The author observed that SoHo would become one of the most valued areas in New York, following the process of requalification of the buildings by changing the usability of the spaces, following the expansion of tourism and the property sector (among other potential investments).

On this basis, gentrification is a complex urban process that involves the transformation of neighborhoods, generally more degraded or working class, into areas of greater socioeconomic value. It can be considered a phenomenon that is not only restricted to changes in physical space but also causes a reconfiguration of local communities' social, cultural and identity dynamics.

In this context, the intersection with media art, as a form of contemporary expression, could play a crucial role in the way gentrification is represented, experienced, understood and interpreted.

Media art as a tool for socio-community representation

Through media art and design in the most diverse formats, such as digital productions (interactive installations, sound art, video mapping, performances, animation, generative art and extended realities), it is possible to give visibility to gentrification parameters often invisible or underestimated in conventional discussions.

Art and design not only serve as means of communication and publication but also as tools for critical reflection on the impact of gentrification on the populations affected. Documentaries such as *The Pruitt-Igoe Myth* (2011), by Chad Freidrichs, record the history of the collapse of social housing in St. Louis (Missouri, USA), which like many other urban housing areas, both past and present, is being torn between property speculation, gentrification and the desire to live in the city. *Dystopia* (2021), by the director Tiago Afonso, follows the urban transformations in the city of Porto over thirteen years (2007-2020), with the expulsion of different groups from the city, such as the Bacelo gypsy community, the population of the Aleixo neighborhood or the vendors of the Vandoma Fair. Also, the book *RENOVICTION: The True Cost of Gentrification* (2024), by Myles Bradley, explores the social consequences of the process in several global cities, are examples that explore urban transformations and their consequences for the local residents of the areas involved, often highlighting the struggle to preserve memory and cultural identity. At a national level, Portuguese artists have also created works for Porto's Ribeira that are a reflection of the social inhalation of local communities, such as the *Ribeira Negra* tile panel (1986) by the painter Júlio Resende, located at the end of the Ribeira tunnel and the sculpture *Cubo* (1983) by José Rodrigues, located in Praça da Ribeira, as well as the tile mosaic *À Cidade* (1998) by Porto painter and architect Fernando Lanhas, located at the top left of the Ribeira tunnel. More recently, some social media works, in platforms such as Instagram, Facebook and YouTube have been used to promote social activism and the creation of participatory spaces to reflect on the theme of gentrification (Barbosa & Lopes, 2020; Polson, 2022).

Media art contributes to broadening the debate on gentrification by connecting with the issue to aid cultural resistance, community empowerment and the creation of inclusive spaces. By exploring gentrification through art and design, media offers a form of symbolic resistance, highlighting the social and economic complexity of urban transformation.

Media art has proven to be important for representing complex social and cultural processes such as gentrification. According to Fiske (1990), the mass media, which convey messages aimed at the general public (such as the press, radio, television, and posters, among others) are not a simple

reflection of reality but rather a territory of debate between dominant and alternative narratives, in which artistic insertion can be representative from the point of view of the visual arts, performing essential values in the construction of meanings about gentrification.

Gentrification, which is often invisible or distorted in its official representations, finds a *stage space* in media art, which allows the inherent problematisation to be raised. The work of artists, designers, filmmakers, directors and photographers, among others, who portray the realities of gentrified neighbourhoods, can contribute to a more critical reading of the process.

Research frame

The present study is framed as an initial stage of an emerging action research project based on art-based methodology, aiming to provide an overview of the scientific literature production on gentrification and topics addressed through a media art perspective over the years. To this end, a bibliometric technique was undertaken for being widely recognised by the scientific community to investigate the evolution of manifold topics associated with arts and humanities by analysing related scholarly literature (Hoai et al., 2021). More specifically, the following research questions frame this study: 1) How has scientific production related to gentrification and media arts evolved over the years?; 2) What are the main themes addressed in this scientific field by the international scientific community?; and 3) What are the most important themes and future trends linked to gentrification and media arts?

This paper is organised into four sections. After the introduction with a brief literature review on gentrification and media art, it is presented a detailed description of the data source, sample, research tools and methods. Next, the bibliometric analysis results are presented in detail, focusing mainly on the overview of the scientific production, primary sources of publication, thematic evolution and thematic map of the field. The paper concludes with the main findings and implications, along with a discussion of the limitations and suggestions for future research to advance this area of study.

Methodology

For this study, bibliometric methods were used together with the Bibliometrix R-toll software to enhance data visualisation and reveal a holistic view of scholarly production in the scientific field of media art and gentrification. This methodology was selected for its globally recognised effectiveness and acceptance in visualising several research fields' qualitative and quantitative evolution (Aria & Cuccurullo, 2017).

The data collection process took place in January 2025 and consisted of several steps. Initially, the keywords to include in the research equation were carefully considered based on other studies published in the field, to ensure a comprehensive search within the study's main topics, resulting in the following research equation: "gentrification" AND ("art" OR "arts" OR "artist*") AND ("technolog*" OR "media"). Next, the data was sourced from SCOPUS and Web of Science (WoS) databases, well-known and widely used in academia, including arts and humanities (Zhu & Liu, 2020), for their representativeness and relevance to the subject under investigation. Given that the main goal was to provide a comprehensive overview of the field, both in terms of core research areas and temporal range, it was decided not to restrict the search in terms of temporal space, document type, language, or subject areas. This process enabled the identification and creation of a database of 110 publications, comprising 69 from SCOPUS and 41 from WoS. After that, 28 duplicate records and two editorial publications were removed, resulting in a final database of 80 publications suitable for the bibliometric analysis.

Results

By analyzing the final database (n=80), the results show it encompasses 69 different sources, involving the contributions from 130 authors, of which 46 are authors of single-authored documents. This last aspect reveals that more than one-third (35.4%) of the scholarly publications in the field were not accomplished collaboratively, scoring an average of 1.64 authors per document. Among the 64.6% of the publications with more than one author, it is noted that the international co-authorship rate is only 6.25%. Furthermore, each document is 7.06 years old on average, accomplishing an average number of citations per document of 15.89.

Overview of the scientific production

Figure 1 presents the temporal evolution of publications by document type and yearly evolution. Although the first article on this topic was published in 1992, it is evident that until 2006, there were almost no publications (n=3). An increase in the number of publications (n= 24) occurred between 2007 and 2017, corresponding to 30%, but it was from 2018 onwards that it was registered a considerable advancement in this field (n=53 publications), representing about 66% of the scientific production. During this period, it should also be noted that a peak of publications (n=13) was registered in 2024, and 2022 was the year with the lowest number of scientific outputs (n=3). On average, the annual growth rate between 1992 and 2024 was 8.35%, demonstrating an increasing global trend of scholarly publications in media art linked to gentrification issues.
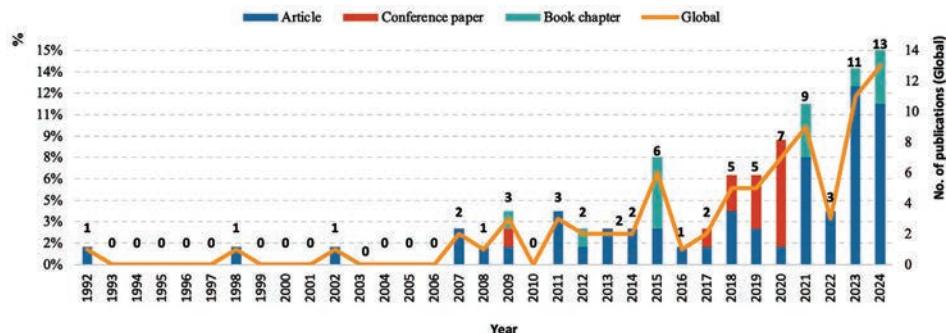
Figure 1 – *Yearly evolution of publications by document type and total publications.*

In addition, when considering the type of the documents published (i.e., articles, conference papers or book chapters), it shows that the vast majority of publications over time represent articles in journals (66.3%), 17.5% are book chapters, and 16.3% are conference papers. It should also be highlighted that conference papers and book chapters were only to be published in 2009, after more than 15 years since the first publication in this scientific field. Moreover, there has been an evident growth of these two publication types in the last ten years (since 2015), with the last indexed conference papers being published in 2020.

Still concerning the analyzed scientific production, it was also identified a total of 24 countries related to scientific production, representing the following the top 5 countries with a larger volume of publications: United States of America (32.5%), Canada (11.3%), United Kingdom (8.8%), Germany and Spain (representing 7.5%, each), and Australia and Netherlands (each country representing 5%). Collectively, these seven countries represent 77.6% of the total output. It is stressed that no publications regarding media art and gentrification were registered in Portugal – where the action research project is being developed, representing this paper as the first national publication in the field to the best of the author's knowledge. Among the most relevant institutions working in this area are pointed out: the University of British Columbia Vancouver (Canada, eight publications), the Universidad Complutense de Madrid (Spain, four publications), the Erasmus University Rotterdam (Netherlands) and the Capital Normal University (China) both with three publications.

Main sources

The most representative sources, with a higher number of publications on the subject of media arts linked to gentrification, are presented in Table 1, accounting for approximately 23.8% of the sampled scientific indexed outputs. Among these eight highly relevant sources for the field, two are books, and the others are journals, indicating that any academic conference stands out in this specific area.

The "International Journal of Urban and Regional Research", with an impact factor (IF) of 2.7, was the leading source contributor to research in the area since 1998, presenting, however, only four articles. Next, the "Space and Culture" international journal (IF=1) had three publications since 2021, followed by four other international journals, each with two articles: "Cities" (IF=6), "Urban Studies" (IF=4.2), "City, Culture and Society" (IF=4), and "Street Art and Urban Creativity" (IF=1.63). Concerning the books, there were registered two publications in both the "International Encyclopedia of Human Geography" and "Sonic Rebellions: Sound and Social Justice".

Thematic evolution

Figure 2 illustrates the thematic evolution of the scientific field, organized according to the most representative periods of scientific production discussed before. From its analysis, it can be noted that the first ten years of publications (i.e., between 1992 and 2002) covered terms mainly relating to "city" and "cultural" aspects. As previously mentioned, the publications began to become increasingly frequent during the next 15 years, and between 2007 and 2017, the prior central terms converged into "media", adding a new one related to "public". In its turn, the scientific field of gentrification and media arts began to further develop between the years 2019 and 2021, resulting in four thematic clusters deriving from earlier concepts: the "media" topic unfolds into "urban", "spaces" and "rights", while the thematic linked to "public" branched off into "urban" and "analysis" topics. From the year 2022 forward, publications in the scientific field developed under nine new themes, indicating not only the growing interest in the subject within the scientific community but also

Source	Source type	Publications (n)	Impact Factor (IF)
International Journal of Urban and Regional Research	Journal	4	2.7
Space and Culture	Journal	3	1.0
Cities	Journal	2	6.0
Urban Studies	Journal	2	4.2
City, Culture and Society	Journal	2	4.0
Street Art and Urban Creativity	Journal	2	1.63
International Encyclopedia of Human Geography	Book	2	—
Sonic Rebellions: Sound and Social Justice	Book	2	—

Table 1 – Most important sources, number of publications and impact factor.
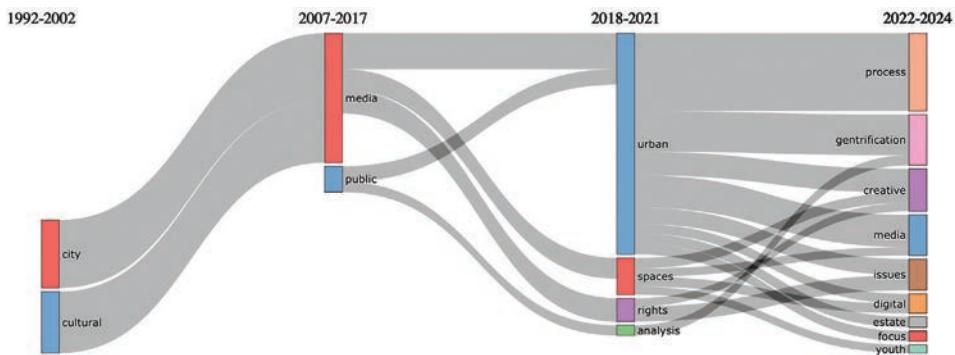
Figure 2 – Thematic evolution diagram of the field (1992-2024). Source: Bibliometrix R-tool output.

its progress to distinct extents, focusing above all on themes concerning: "process", "gentrification", "creative", "media", "issues", "digital", "estate", "focus" and "youth".

Thematic map

A thematic map was created using authors' keywords to provide an overview and analyze the primary themes that drive advancements in the field of knowledge. This map reveals 12 key clusters (C), as illustrated in Figure 3, whose size is proportional to the frequency of keywords of the analyzed documents. It is important to note that some clusters overlap and are not visible in the figure, which will be discussed in further detail next.

From its analysis, it becomes evident that 3 clusters represent the motor themes having dominant importance to the progress of the research domain, namely: (C1) "placemaking", "urban transformation", "urban regeneration" and "Chinatown"; (C2) "urban art" and "Madrid"; and (C3) "gentrification", "art", "creative city" and "tourism". Regarding this last theme (tourism), it should be highlighted that the authors' research revolved essentially around the impacts that tourism and overtourism have been having in several geographies, as well as on promoting different forms of tourism, such as urban tourism, cultural tourism, creative tourism and mural tourism (also known as street-art tourism). Three other clusters, with high centrality but less development, appear overlayed in terms of relevance and development degrees, encompassing the following themes: (C4) "social media", (C5) "DIY – Do it Yourself" open design trend, and (C6) "Poland".

Additionally, six different clusters are positioned in quadrants representing lower degrees of relevance despite their degree of maturation. For the case of niche themes located in the upper-left quadrant, it can be concluded that (C7) "public space", "participation", "place" and "public
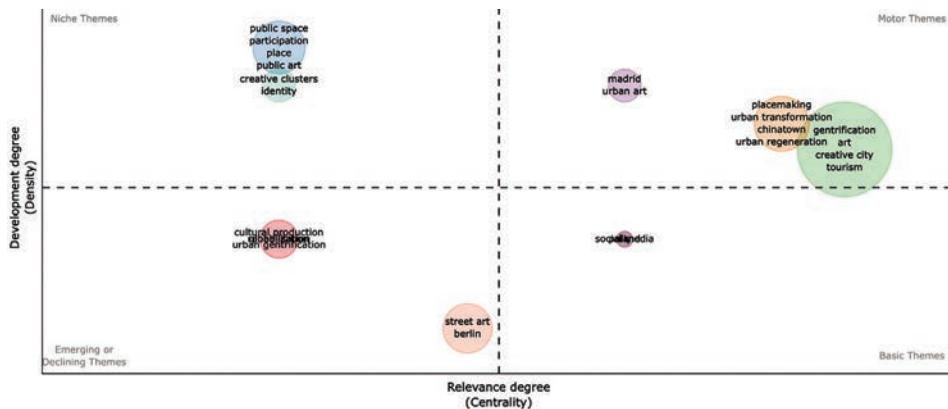
Figure 3 – Thematic map with the resulting 12 clusters from the screened scientific publications. Source: Bibliometrix R-tool output.

art", and (C8) "creative clusters" and "identity" subjects represent very specialized themes linked to media art and gentrification. Conversely, four clusters are positioned in the quadrant of emerging or declining themes, namely (C9) "street art" and "Berlin", (C10) "cultural production" and "urban gentrification", (C11) "rehabilitation", and (C12) "globalization".

Conclusions

This study evaluated scientific literature on the topic of gentrification from the perspective of media art, providing a comprehensive analysis and understanding of this emerging field.

To the best of the authors' knowledge, this topic has not been previously explored through bibliometric analysis, providing multiple theoretical insights and future research hotspots that can advance the discussion and the emergence of new research and artworks about gentrification in the context of media art.

First, the descriptive analysis conducted concerning the scientific production allowed to conclude that the first article on this specific topic was only published in 1992, despite the debate on gentrification dating back to the 1960s. Compared to other topics in the broader field of media arts, and considering that research started to gain some traction just in 2007 and significant progress after 2015, it reveals that this area is potentially still in its infancy, although the past five years evidenced a growing international interest from the scientific community. This is also verified when analysing the number of publications by document type, concluding that articles in journals (mainly in the International Journal of Urban and Regional Research, and Space and Culture) represent about 66.3% of the total publications, and two recent books showed to be references in the field (i.e., International Encyclopedia of Human

Geography, and Sonic Rebellions: Sound and Social Justice). However, the lack of international collaboration was evident and is potentially a critical factor explaining this area's slow development.

Next, when investigating the key topics worked internationally, it was concluded that the main themes addressed have evolved over the years, focusing until 2017 on aspects linked to cities, culture, media and the public. More recently, since 2018, the focus has shifted towards urban spaces, rights, gentrification, issues, processes and media, among others less expressive.

However, from a broader perspective, the leading themes for advancing the scientific field were gentrification, art, creative cities, tourism, urban art, placemaking, urban transformation, and urban regeneration. It was also concluded that specific regions served as a focus for research themes, namely Chinatown, Madrid, Berlin, and Poland. Nevertheless, two themes showed being very important for the field's progress but not well developed (i.e., social media and DIY – Do it Yourself), therefore representing the first (1) suggestion for conducting future research linked to gentrification and media arts. As part of this study's conclusions, other suggestions for future research impose for generating a more prolific global impact on the field: (2) develop further studies with more extensive collaboration between scholars and institutions, both on national and international levels; (3) adopt participatory methodologies to promote the community participation, co-creation and the inclusion of their insights and living experiences regarding this topic; and (4) investigate which artistic forms are being used to capture the impacts of gentrification on local communities and the urban landscape.

Although the results from this study, some limitations should be acknowledged in interpreting them. The sample of publications included is limited to two scientific databases (Scopus and Web of Science), which, despite being considered among the most comprehensive in the field of arts, may overlook relevant records not indexed within them, leading to an incomplete understanding of the global panorama. Another limitation typical for studies of this nature regards the search terms, though carefully pondered by the authors to achieve a broad overview of the field. Lastly, it is stressed that bibliometric analysis focuses mainly on quantitative indicators, which limits the understanding of the details and complexities of the subject, so the next stage of the research will encompass a qualitative analysis of the article content.

REFERENCES

Alcântara, M.F. (2018). *Gentrificação*. Enciclopédia de Antropologia. Universidade de São Paulo, Departamento de Antropologia. Disponível em: http://ea.fflch.usp.br/conceito/gentrificacao

Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for Comprehensive Science Mapping Analysis. *Journal of Informetrics, 11*(5), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Barbosa, I. & Lopes, J. T. (2020). O Porto não se vende: Resistências à gentrificação através da produção artística no período pós-austeritário. *Cadernos de Arte e Antropologia, 9*(2). https://doi.org/10.4000/cadernosaa.3201

Fiske, J. (1990), *Introduction to communication studies* (2nd ed.). Routledge.

Glass, R. (1964). *London: Aspects of change*. MacGibbon & Kee.

Hoai, B. S., Thi, B. H., Lan, P. N., & Tran, T. (2021). A bibliometric analysis of cultural and creative industries in the field of arts and humanities. *Digital Creativity, 32*(4), 307–332. https://doi.org/10.1080/14626268.2021.1993928

Polson, E. (2022). From the tag to the #hashtag: Street art, Instagram, and gentrification. *Space and Culture, 27*(1), 79–93. https://doi.org/10.1177/12063312221090608

Raya-Tapia, A.Y., Ramírez-Márquez, C. & Ponce-Ortega, J.M. (2024). Clustering of zones according to the level of gentrification by using an unsupervised learning algorithm. *Cities, 151*, 105133. https://doi.org/10.1016/j.cities.2021.105133

Smith, N. (1982). Gentrification and uneven development. *Economic Geography, 58*(2), 139. https://doi.org/10.2307/143793

Smith, N. (1996). *The new urban frontier: Gentrification and the revanchist city* (1st ed.). Routledge.

Zhu, J. & Liu, W. (2020). A tale of two databases: The use of Web of Science and Scopus in academic papers. *Scientometrics, 123*, 321–335. https://doi.org/10.1007/s11192-020-03387-8

Zukin, S. (1982). *Loft living: Culture and capital in urban change*. Johns Hopkins University Press.

sustainability, agency and material care

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Counting to a thousand is tiring

Participatory action to understand an olive tree

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ABSTRACT

The proposal we present *10 veces 100 para contar 1000* was carried out in the village of Vilanova de Alcolea, in the province of Castellón, Spain, in the context of *AVAN, Espacios Rurales de Investigación Contemporánea. AVAN* is a network of rural centres for contemporary research in different villages in the interior of Castellón. This proposal was developed during an artistic residency from March to November 2024. The research theme of this fourth edition was *Depatrimonialising heritage*. Under this concept, we investigated the patrimonialisation of thousand-year-old olive trees and the existing problems with the sale and purchase of the hundred-year-old olive trees in the town. Our proposal materialised with the making of a thousand pieces of wood from the pruning of ancient olive trees, with the aim of collectively counting up to a thousand. This collective action was carried out with the pupils of the village's infant and primary school and with all the inhabitants who wanted to participate. Once the collective action was finished, the pieces were installed on the doors of the old weighing scales of the agricultural cooperative. The main objective was to put us in the place of the tree and remind us that other species, different from ours, have other times, other rhythms and other approaches to inhabiting the world.

Introduction

> En quin moment ens vam creure que les línies de costa i les ones de la mar eren nostres, com també la neu i la roca.
>
> (Miquel, 2023, p. 16)

The interior of Castelló is one of the most mountainous regions in Spain. Reaching some of the villages in this area requires taking the necessary time, as the roads do not allow for high-speed travel. Quite the opposite, in fact. Most of these roads are small and winding, forcing drivers to slow down and proceed cautiously. These characteristics are far removed from the fast-paced nature of modern life. Consequently, many villages have experienced population decline, and some cultivated fields have been abandoned.

This idea of abandonment, which at first may seem negative, has in fact allowed many olive trees in the region to survive for a thousand years. Without human intervention replacing them with more economically profitable and productive crops, they have endured. Other olive trees have been carefully maintained, generation after generation, by their owners. Young people have tended to the trees planted by their ancestors, ensuring their survival in an act of memory transmission.

However, in these mountainous villages of Castelló, generational succession in agriculture is rare. Most young people move to the city, leaving their rural homes behind. One could argue that the local vegetation has been preserved due to the rugged terrain—mountains as opposed to the flat, easily accessible coastal areas. Coastal villages switched from olive trees to orange groves long ago, replacing dry farming with irrigation-based agriculture, which is much more productive in economic terms.

This phenomenon has allowed the landscapes of La Plana Alta, l'Alt Maestrat, and Els Ports to retain their *ribazos* (dry-stone walls built entirely by hand) and their ancient olive trees, which stand as symbols of identity. These trees rise in the landscape like monuments, linking the present to the past. However, in recent years, these monumental olive trees have become highly sought after, demanded for decorative use in gardens far from their original environment, as researcher Hellín (2021) has pointed out. This trend aligns with contemporary times, in which the monetisation of any act, object, or experience is growing exponentially, disregarding its symbolic, emotional, or heritage value.

This conflict—the sale of century-old and millennial olive trees—was the catalyst for the artistic proposal *10 veces 100 para contar 1000*, which we developed during our residency in the town of Vilanova de Alcolea, Castelló (Spain), between March and November 2024, as part of the *AVAN Espais Rurals de Recerca Contemporània* project.

In this text, we aim to describe and analyse this action. First, we will outline the background of cultural management in Vilanova d'Alcolea,

demonstrating that there is already a tradition of citizen participation in cultural and artistic initiatives in this region.

Secondly, we will describe the *10 veces 100 para contar 1000* project and the response from the local community.

Finally, we will explore performance as a pedagogical tool.

Cultural background in the region

There are precedents in the Spanish context from the 1960s and 1970s where contemporary art practices developed in rural areas, to give just a few historical examples: the Spanish Museum of Abstract Art in Cuenca, the Museu d'Art Contemporani de Vilafamés, and the Vostell Museum in Malpartida. The latter opened its doors in rural Extremadura in 1976 (Lorente & Juan, 2024). In an interview with Wolf Vostell himself, he stated that what interested him was introducing 20th-century art to a population that was not an "exhausted society, in a political and social sense" in opposition to urban societies (Cortés, 2018). This shift in perception towards the knowledge and thoughts underlying rural societies as something valuable has been reflected in artistic practices in recent decades. This signifies a paradigm shift from the disdain it had previously been subjected to due to various reasons (Sánchez-Mateos Paniagua & Fernández López, 2024).

The *AVAN* project, *Espais Rurals de Recerca Contemporánea*, has been developing in different towns in the interior of Castellón since 2021. It is a programme that attempts to break with the idea that contemporary artistic creation belongs solely to urban spaces. It conceives rural space as a place of contemporary artistic thought and practice, promoting the active participation of rural communities in artistic processes, recognising the value of their knowledge and experiences; attempting to break with the urban vs. rural dualism (Verge, 2023), in which the urban is identified with progress and knowledge, and the rural with the ancestral and archaic.

Each edition of the programme focuses on a specific research theme. The first edition explored *Sowing Worlds* (AVAN, 2022), the second *That Which We Did Not Know We Knew* (AVAN, 2023), the third *Memory, Much Memory*, and the fourth *Depatrimonialising the Patrimonialisable*, which is the framework for the *10 veces 100 para contar 1000*, proposal.

Before describing the project, we would like to emphasise that *AVAN* is just one of the initiatives supported by the University Extension Programme (PEU) at the Universitat Jaume I. The PEU connects the university with the Castellón region, working in collaboration with various cultural agents from villages with fewer than 5,000 inhabitants. Initiatives such as the New Rurality Classroom, actions within the Pedagogic Museum of Castellón, *Nomadic Pedagogies* (Traver et al., 2018), the *Fava* Art Festival in Vilanova d'Alcolea, and the *En Clau* programme are just

some of the projects carried out across Castelló province through this University-Territory Agents partnership (López et al., 2022).

This long-standing collaborative work is evident when engaging with the region, as both cultural agents and the local population are accustomed to participating in activities of this nature. As Traver, Segarra, Lozano, and Trilles (2018) state:

> Vilanova and Sant Mateu have a long-standing commitment to local and cultural development projects linked to the A21 Culture initiative. Moreover, both the cultural and local development technicians of these two towns, as well as the project coordination team, are part of a structured network connecting the university with local networks in Castelló province, known as Seminari Garbell. This initiative coordinates, deepens, and disseminates these experiences. This collective effort has led to the establishment of a local network in both towns, involving various associations and community groups, which, following the principles of the A21 Culture, promote democratic participation and civic engagement in matters related to culture and the sustainable development of their localities.

> (Traver et al., 2018, p. 25)

We wish to highlight this fact, as from the very beginning, we were pleasantly surprised by the community's enthusiasm for participating and collaborating in our proposal. This clearly demonstrates that their engagement was not a coincidence but rather the result of a long history of cultural action within the territory.

Counting to a thousand is exhausting

One of the key features of the *AVAN* artistic residencies is that each artist collaborates with two local mediators. These mediators act as a bridge between the artist and the socio-cultural realities of the region. Unlike other projects where artists arrive at a location and work in isolation, in Vilanova d'Alcolea, we were always accompanied by two mediators who had in-depth knowledge of the region—both its physical landscape and its cultural and social characteristics. This ensured that the final proposal was a collaborative and carefully considered process.

This collaboration, which stands as a fundamental pillar of the *AVAN* project, transcends mere assistance or cultural translation. The local mediators bring a perspective rooted in an intimate knowledge of the territory, its rhythms, its silences, and its voices. Their work is not limited to facilitating logistics or interpreting cultural codes; it involves a deep immersion in the idiosyncrasies of the place, unveiling layers of meaning that often escape the foreign gaze of the newly arrived artist. This constant
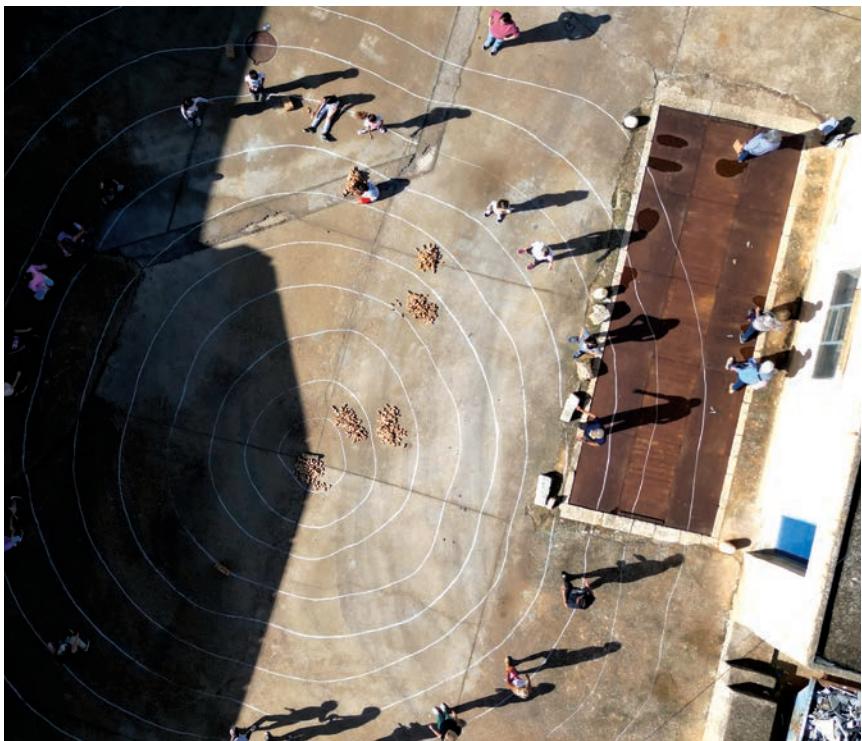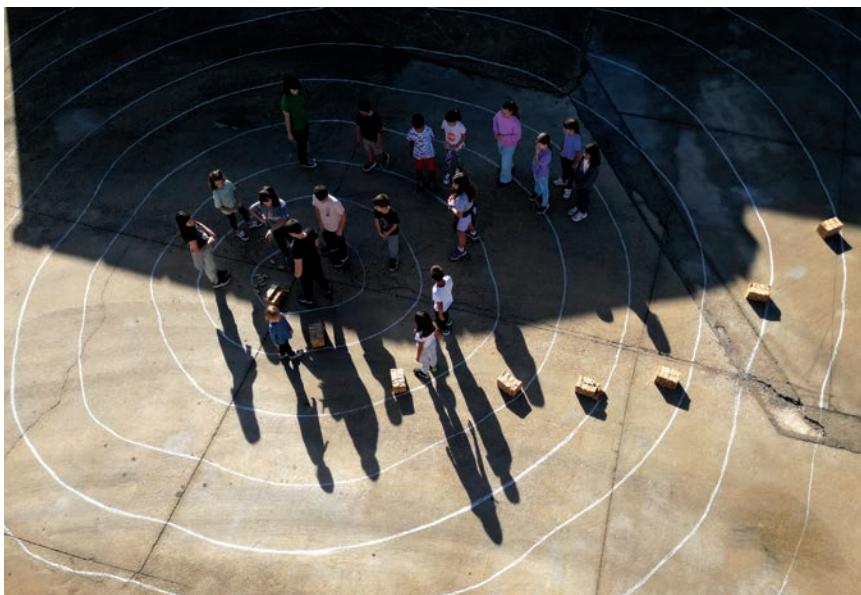
Figures 1 and 2 – Collective Actión, *10 veces 100 para contar hasta 1000* (Roger Sarmiento, 2024).

Figure 3 – Instalation *10 veces 100 para contar hasta 1000* (Author, 2024).

dialogical and supportive dynamic fosters a creative symbiosis where the artist's vision intertwines with local wisdom, generating artistic proposals that not only respond to an individual concern but also resonate with the very essence of the territory and its inhabitants.

10 veces 100 para contar 1000, was both a collective action and an installation, which we describe below. We crafted 1,000 wooden pieces, each measuring seven centimeters, from the pruned branches of the village's ancient olive trees, thanks to the collaboration of a local resident who provided the material. With these pieces, we invited the children of C.R.A. *El Trescaire* to take part in a collective counting activity, reaching 1,000. The approach was highly visual and straightforward. We drew ten concentric circles on the ground, imitating the growth rings of a tree trunk (Figures 1 and 2). In each of these circles, we placed 100 wooden pieces.

The performance structure involved counting collectively while passing the wooden pieces from hand to hand—ten times one hundred to reach one thousand. The sole purpose was to understand, through the physical act of movement and a poetic gesture, what it means to live for a thousand years—putting ourselves in the place of the olive tree. Alongside the schoolchildren, other villagers also joined the action, as we invited the entire community to participate. Once the collective action was complete, we installed the 1,000 wooden pieces on the doors of the old weighing station of the agricultural cooperative (Figure 3), serving as a symbolic reminder of the immense timescale of these ancient trees. As one child insightfully remarked: "Counting to a thousand is exhausting."

Performance as a pedagogical tool

We could have gone into the school and simply explained to the children, using words, the importance of preserving a tree that can live for 1,000 years. We could have emphasized, through the tone of our voices, that this is significant because it reminds us that other cultures existed before ours. It also reminds us of that other species, different from our own, experience time, rhythms, and ways of inhabiting the world in completely different ways.

We could have shown images of these trees or even maps to indicate where they are found. However, we believed that this learning experience would be far more meaningful if we engaged the body in movement and carried out a collective action—both from a pedagogical perspective (Álvarez & Ramos, 2017) and from the perspective of artistic experience.

As Ernesto Neto explains in an interview with Limorte-Menchón, stepping away from the individual experience to immerse oneself in a collective experience fosters a deeper connection with art:

> A return to that moment when body and mind were indivisible, to experience and participate in art not only through sight—the most intellectual sense—but also through smell, using spices, and touch; transforming the spectator's body into an essential element, closely linked to the body of the artwork. The sensory experience that emerges from this relationship, as Neto offers us, moves from the individual to the collective, dissolving not only the boundaries between artist and spectator but also between art and life, encouraging us to become aware of ourselves and of others through this shared corporeality. The ultimate intention is to temporarily restore, through art, the lost experience of community that, at some point in Western history, made human beings feel like an inseparable extension of the body of the world.
>
> (Limorte-Menchón, 2018)

This idea of thinking through the body was at the heart of our approach

when designing this collective action. By collectively experiencing the meaning of the number 1,000, passing each wooden piece from one body to another, counting aloud from one to a thousand, we created a kind of collective ritual—both affective and playful. We believe that, for everyone who participated in the action, it was a deeply meaningful experience.

REFERENCES

Álvarez, E., & Ramos, C. Y. (2017). La performance como recurso comunicativo-expresivo en el aula de primaria: *The performance as a communicative-expressive resource in the primary classroom*. El Guiniguada, (26), 47–61. https://ojsspdc.ulpgc.es/ojs/index.php/ElGuiniguada/article/view/725

https://doi.org/10.20420/ElGuiniguada.2017.136

AVAN Espais Rurals de Recerca Contemporània(2022). *Sembrar mundos: AVAN/01.* Publicacions de la Universitat Jaume I.

AVAN Espais Rurals de Recerca Contemporània(2023). *Allò que no sabíem que sabem: AVAN/02.* Publicacions de la Universitat Jaume I.

AVAN Espais Rurals de Recerca Contemporànea. (n.d.). *Espais AVAN*. https://espais-avan.org

Cortés Morillo, J. (2018). Arte contemporáneo versus mundo rural o la identificación de arte y vida desde la periferia. El Museo Vostell Malpartida como paradigma. In M. del Mar Lozano Bartolozzi & V. Méndez Hernán (Coords.), *Paisajes culturales entre el Tajo y el Guadiana* (pp. 217-238). Universidad de Extremadura.

Hellín, M.J. (2021). *El olivo* (2016): Metáfora del (des)enraizamiento identitario, rural y cultural. *Arizona Journal of Hispanic Cultural Studies, 25*, 179–197. https://doi.org/10.1353/hcs.2021.0017

López Monfort, A., Ginés, X., et al. (2022). *Acció Rural. Mobilitzar Coneixement per ACOMODAR Comunitat. Trobada 2022*. Universitat Jaume I. https://doi.org/10.6035/1578-5904.13

Limorte-Menchón, C. (2018). Pensar con el cuerpo, una conversación con Ernesto Neto. *Arte, Individuo y Sociedad, 30*(1), 211–213. https://doi.org/10.5209/ARIS.58781

Lorente Lorente, J. P., & Juan García, N. (2024). El nombre no hace la cosa: nomenclaturas/taxonomías de los museos de arte contemporáneo en la España rural. *Diferents. Revista de museus*, 9, 8-25. https://doi.org/10.6035/diferents.8429

Miquel, M. (2023). Paisatges invertits. In Tirado del Olmo (Ed.), V. *Paisatges invertits* (pp. 14-17). Centre cultural Melchor Zapata.

Traver, J. A., Segarra, T., Lozano, M. & Trilles, E. (2018). *Pedagogías nómadas en acción: Participación y desarrollo comunitario*. Universitat Oberta de Catalunya.

Verge, I. (2023). Espais Avan: Un model de mediació situada en contextos rurals i perifèrics. *kult-ur*, 10(20). https://doi.org/10.6035/kult-ur.7162

An eco-feminist design collective crafting empowerment
Witches of the East

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ABSTRACT

Design collectives today have become instrumental in advocating transdisciplinary practice between art, craft and design. Collectives can be pillars of change, resist capitalism and promote solutions to mitigate the environmental and social destruction of fashion and build an ethical path. The Witches of the East Collective –based in Türkiye– working in a transdisciplinary framework adopts activist design methods in the pursuit of change, transformation, and repair in response to the ecological and social vulnerabilities created by a global, patriarchal, and colonialist design system. Against the current industrial paradigm of the textile and fashion industry, slow and crafted design, circular design –as a response to the waste-generating linear flow–, biodesign that collaborates with nature rather than depleting natural resources, and craftivism that view craft not merely as an extension of traditional or domestic production but as a critical and discursive force and collaborative design guided by sympoietic principles. Building on those principles, the Collective's first work was exhibited during the 2023 International Textile Biennial in Türkiye, challenging the top down power centered design system that showcased an alchemy of materials and craftivism to create a narrative work that highlighted the unique characteristics of the Collective's members and their professions. Another workshop held with local and migrant women –an extreme poverty group– residing in the old city center of Izmir, structured around a participatory and community centered methodology rooted in ecofeminist design and craftivist principles. This paper analyses how the Witches of the East Collective explores the intersections of textile craft, feminism, environmentalism, and activism to confront the enduring legacies of patriarchal, colonial, and capitalist systems. With an aim to challenge these societal norms, the Collective provokes dialogue and inspires transformation to create collective empowerment by centering the needs of underrepresented groups.

KEYWORDS

Slow design, circular fashion, eco-feminism, craftivism, sympoiesis

Introduction

The history of art and craft is very much intertwined with societal structures that have created inequalities, excluded certain groups –largely female– and harmed nature. Marginalization of gender and labor can also be traced in the history of medicine, where women healers and their knowledge was dismissed as "witchcraft" and considered unorthodox and harmful (Reed, 2021). Although the duty for healing has been seen as "a natural duty" for mothers and spouses, these women were marginalized –mistreated, punished, prevented and even executed– for practicing medicine (Peirats, 2023). Rooted in the historical suppression of women healers and their knowledge, the Collective reclaims the narratives of the so-called "witches".

During industrialization, construction of femininity was defined in line with the culturally accepted roles for women. Within this frame womens' craft was marginalized due to the emerging separation of art and craft. As Rozsika Parker (2010) explains, needlework –performed mainly by women– was not recognized as art but rather a feminist expression, contributing to a clear marginalization of women and their craft. Confined to the domestic sphere, textile craft was labeled as "women's work" and its value was pushed aside by patriarchal, colonial and capitalist systems (Parker, 2010).

The industrial and modernist design paradigm not only caused the separation of design from crafts but also reinforced a masculine-feminine dichotomy. With the professionalization of design as a discipline, craft became marginalized once more as a non-professional, traditional, and anonymous form of production of female labor, lacking exchange value (Baydar, 2015; Buckley, 1989). While design was framed as belonging to the 'masculine' realm of professionalism, intellect, technology, action, and progress, craft was confined to the 'feminine' realm of amateurishness, repetition, domesticity, and staticity (Baydar, ibid). This dynamic not only marginalized women's skills but also excluded craft production—and, by extension, women—from the historical narrative of industrial design , as well as from the value system of fashion design (Buckley, ibid).

In the 1970s, craft, expressed through feminist artwork, moved from the domestic or private sphere into the public domain, exposing the "politics of domesticity" (Bratich & Brush, 2007). Unlike second-wave feminists, who rejected the domestic arts as oppressive labor (Chansky, 2010; Robertson, 2011), third-wave feminists embraced crafts as politically empowering (Baumgardner & Richards, 2010; Groeneveld, 2010; Minahan & Wolfram Cox, 2007). This shift signaled a reevaluation of craft as a medium for ecofeminist expression, challenging traditional power structures and redefining the value of creative labor traditionally associated with women.

Working at the crossroads of craft, feminism, activism and environmentalism, Witches of the East Collective focuses on supporting

marginalized groups. Through participatory workshops, collaborative projects and innovative design practices they challenge traditional power structures and destructive production and consumption systems by promoting restorative design approaches. This paper aims to show how craft and design can be merged to fix broken systems and also bring healing and renewal back into the daily routine of people as well as the planet.

Bewitching ecofeminism & craftivism

The separation of nature and science during the Enlightenment period, where nature was considered female –Eastern– and science and subsequent economic development male –Western– sowed the seeds for a patriarchal and colonial system (Shiva, 2010). This system emerged as a direct consequence of the suppression of witches and the dismissal of their knowledge. Ehrenreich and English address the patriarchal and power oriented history of medical science which developed under patronage of the ruling class.

"Witches lived and were burned long before the development of modern medical technology. The suppression of witches from the darkness of the Middle Ages onwards, the vast majority of whom were lay healers serving the peasant population, marks one of the struggles in the history of humanity's suppression as women healers" (Ehrenreich and English, 1993, p. 1).

Like the development of science, the development of the fashion and design industry has been patriarchal and colonial. In the fashion system that has developed since the industrial revolution that marked the Anthropocene era, the legitimization of design and the creation of brand value have developed in a patriarchal structure, while women have been invisible, either feeding the fashion economy as consumers or invisibly creating the workforce of the industry (Buckley, 1989). With globalization, colonialism continues as the global north transforms the south into a production workshop and wasteland in the fashion industry. On the other hand, it has been women who have been looking for solutions to the environmental and social destruction of fashion and building the ethical fashion path mostly through an ecofeminist and craftivist approach.

Ecofeminism linking ecology and feminism interprets womens' repression and exploitation of the patriarchal system as well as suppression of nature within the capitalist system. It is a thought developed against the humane domination of all components of nature like animals, earth, water, air etc. and over disadvantaged and underrepresented people like women, children, poor, people of color and queer ect. (Warren, 2000). Ecofeminism refuses reductive approach making distinction between nature and science as well as gender discrimination. In line with Vandana Shiva's ecofeminist approach a constructive and ecological development

will only be possible by gaining the feminine element. Women have a very special connection to the environment through their daily interactions which has been ignored by the capitalist patriarchal system (Mies and Shiva, 2014). Ecofeminist design paradigm revalues the oppressed and underrepresented people and nature due to the colonial, patriarchal and capitalist understanding.

Craftivism appears as an activist design methodology to relocate textiles in a more discursive and political sphere. A term firmly associated with Betsy Greer, craftivism combines craft and activism to challenge social and political injustices through creative practices. Rooted in feminist values, craftivism emphasizes the personal as political, using traditional crafts such as knitting, embroidery, and quilting as tools for empowerment and social change. It seeks to reclaim and elevate practices historically dismissed as "women's work," turning them into powerful mediums for resistance and dialogue. Feminism and craftivism share a common goal of dismantling oppressive systems and advocating for equity. By bringing attention to marginalized voices and fostering community, craftivism aligns with feminist principles of collaboration, care, and inclusivity. It also demonstrates that acts of making can also be acts of protest, a new mode of political activism (Greer, 2014).

Creative processes of the collective

The Witches of the East Collective integrating ecofeminism and craftivism into its research and creative processes aim to have a transformative role in shaping the fashion and design landscape in Türkiye. Their skills in healing and care are deeply rooted in the wisdom of Anatolian geography, the revolutionary spirit of the Republic, and their regenerative relationships with nature and culture. These abilities, inherited from their grandmothers, carry the alchemy of Anatolian shamanism, an unspoken yet powerful form of natural witchcraft.

The region's shamanic heritage, including herbal remedies and mystical healing, embodies a wisdom that has been passed down through generations. These supernatural healing abilities of Anatolian women –contrary to Western witchcraft– bear maternal qualities and are welcomed in communal life as healers. This becomes an inspiration for a 'nature-based spirituality' in textile and fashion praxis creating well being for bodies and souls as well as for the planet. On their journey, the Collective draws upon witchcraft as an Eastern source of inspiration, one that remains largely unfamiliar to Western ideology. Rather than viewing witchcraft through the lens of marginalization, as often seen in Western narratives, they embrace it as a symbol of ancestral wisdom, healing, and deep ecological knowledge. By reclaiming these traditions, The Witches of the East Collective challenges dominant narratives that

have historically dismissed or suppressed non-Western spiritual and craft practices. Their work seeks to restore the significance of these lost or overlooked traditions, positioning them as vital tools for empowerment, sustainability, and collective transformation.

The Witches of the East Collective's reclamation of ancestral wisdom and craft aligns with a broader historical narrative in which women's roles in textile production, education, and modernization have been deeply intertwined. While the Collective draws from pre-modern, indigenous, and ecofeminist traditions, the institutionalization of women's education in Turkey took a different path.

The role of women, in the framework of the modernization and westernization policies of the Turkish Republic –founded by Mustafa Kemal Atatürk in 1923– was specifically developed to educate and professionalize young women. Institutions specialized for girls such as; Kız Enstitüleri (Girls' Institutes), Cumhuriyet Kız Meslek Liseleri (Girls' Vocational Schools of the Republic), and Olgunlaşma Enstitüleri (Institutes of Applied Arts for Girls); were established to provide vocational training in fashion and textiles, while also incorporating domestic science knowledge and practice. By educating women, these institutions not only reinforced the representation of the nation-state within the domestic sphere, but also served as a space where Western civilization and national identity intersected (Akşit, 2005). While preserving cultural heritage through Turkish textile crafts traditions, this educational model empowered women, fostering an alternative economy by cultivating a productive female workforce. This has also paved the way for a contemporary design education in the field of fashion and textiles.

Building on the historical connections between craft, feminism, and education, The Witches of the East Collective extends these traditions into a contemporary framework that challenges dominant systems of production and consumption. The Collective seeks to create textile alchemy to reimagine fashion and textiles as tools for empowerment, community building, and environmental awareness. Their work demonstrates how creative co-designing processes can serve as a powerful force for the heal-repair-restore attitude. The Collective's creative processes, which include participatory workshops and collaborative design pieces that weave together contemporary design with ecofeminist and ecological design principles.

Their approach aligns with the concept of sympoiesis, embracing interdependence, shared authorship, and dynamic co-evolution in both design and activism. Donna Haraway's concept of sympoiesis (2016), challenges the idea of self-contained against collaborative and interdependent systems of making and being. Sympoiesis derives from the Greek *sym* –together– and *poiesis* –creation or making– meaning "making-with" rather than self-making. Sympoiesis recognizes that

all life forms exist within a network of relationships shaped by mutual dependencies and interactions. Harraway uses this framework to argue against anthropocentric views, advocating co-creation across species, disciplines and communities.

Their work prioritizes interconnectedness, particularly in the way they engage with communities through craft, textiles, and environmental activism. By integrating circular fashion principles, slow design, biodesign and collaborative workshops, the Collective fosters an open-ended process where knowledge, skills, and materials evolve dynamically within a shared ecosystem.

Their first collective work, titled *A Sympoietic Fashion Practice: Ties* (Figure 1) was exhibited at the International Textile Biennial in İzmir from September 1 to November 24, 2023. Through this installation, which was located in the Atlas Pavilion in Kulturpark and referenced Donna Haraway's concept of Sympoiesis/Symbiogenesis, the Collective highlighted the fragile social and ecological bonds related to displacement, migration, and relocation, expressing them through wearable textile patterns.

The installation emphasized the interconnectedness of human and non-human lives, addressing the entanglement of ecological destruction and social injustice. By incorporating textiles as both material and metaphor, the Collective underscored how fabrics, much like people, carry histories of displacement, labor, and resilience. Each wearable piece in *Ties* symbolized bonds—between individuals, communities, and the environment—challenging the exploitative cycles of fast fashion and extractive economies. Through circular and reclaiming processes, the Collective invited viewers to reflect on the consequences of consumption and the urgent need for regenerative, ethical, and symbiotic design practices.

Rooted in climate injustice, exploitative labor, and unregulated textile waste—worsening inequalities between the Global North and South—the fashion industry discards a truckload of clothing every second. This waste disproportionately impacts the Global South, as seen in Accra's Kantamanto region, where massive shipments of discarded textiles arrive, known locally as *Obrani Wawu*—Dead White Man's Clothes. The Collective responds to this global trauma with an installation reflecting these fragile social and ecological bonds, using waste textiles to explore connectivity and creative symbiosis. Their ecofeminist, slow, and circular design approach translates into three sub-categories as; (i) plant migration and ethical foraging, (ii) what is left behind and what is overlooked and (iii) feminine and restorative patterns.

Plant migration and ethical foraging involve designing and coloring practices through collaboration with nature, emphasizing respect and partnership with the environment (Figures 2 and 3). This approach focuses on ethical foraging, rewilding, and growing, while protecting biodiversity, living systems, and interspecies interactions by adopting

Figure 1 – A Sympoietic Fashion Practice: Ties, Turkish Textile Biennial (The Witches of the East Collective, 2023), ©İlyas Hayta.

Figures 2 and 3 – Close-up photo of one of the designs (left) and stitching detail of leftover fish scales (right). *A Sympoietic Fashion Practice: Ties*, Turkish Textile Biennial (The Witches of the East Collective, 2023), ©İlyas Hayta.

ecological symbiosis. The foundation of the concept lies in the migration of plants and woodlands due to climate change, as well as the growth and reproduction of species through relocation, such as birds. It explores the displacement of plants to create new settlements and the spreading of seeds to establish new roots. The materials used are naturally dyed

fabrics, printed with plants, branches, and roots gathered through ethical collecting methods with the consent of the plants.

What is left behind and overlooked involves reclaiming and repositioning waste from both natural and industrial processes that are idle, misplaced, or discarded, contributing to ecological and social destruction. This is addressed through circular design methods. By employing techniques like upcycling, biophilic design, and biodesign, designers transform materials such as waste fabrics, textiles, fish scales, and bioplastics into sustainable and innovative clothing and accessories. This process cooperates with nature and respects the life of living systems. Biomaterials, obtained by fermenting cellulose into biofilm through the symbiotic relationship between bacteria and yeast, are grown in collaboration with living organisms participating in the design process. These materials are then combined with textile waste and discarded fabrics to create new textile surfaces. These new surfaces are further enhanced with embroidery depicting figurative species displaced by the climate crisis and destructive fashion supply chains, resulting in clothing that speaks a shared language and integrates with other designers' works in the installation.

Feminine and restorative patterns involve displaced textile waste, which forms interconnected designs with fabrics, creating a disembodied, formless, fluid, and dynamic cocoon. By developing a feminine, therapeutic, and somaesthetic approach to garment design and the act of wearing, a regenerative connection with clothing is reestablished. Drawing inspiration from a shamanic woman's hair braid, interwoven textile patterns of varying thickness and texture create a wearable shell that is both resilient and fluid. Rooted in activist, ecofeminist, craftivist, and slow design practices, it fosters an inclusive, embracing, adaptive, and solidaristic pattern that moves within collective networks, aiming to promote well-being, healing, and recovery.

Collaboration and community are also central to the Collective's approach, shaping both their creative process and their broader impact. By engaging in workshops (Figures 6 and 7), participatory installations, and community-driven projects, the Collective redefines the act of making as a relational process—one that connects people across generations, geographies, and cultural traditions.

The *States of the Bath: Touching Water & Soap* workshop is an example of such work that was organized for marginalized women living in poverty with limited access to bathing facilities. In their neighborhood, where homes lacked bathrooms, a communal hamam —Turkish bath— served as the primary space for bathing, and heating was still reliant on wood burning. To promote sustainability and self-sufficiency, the workshop repurposed domestic waste —discarded kitchen oil and wood ash— to teach participants how to make their own bathing soap. Additionally, they

Figures 4 and 5 – Close-up photos of the designs. *A Sympoietic Fashion Practice: Ties*, Turkish Textile Biennial (The Witches of the East Collective, 2023), ©İlyas Hayta.

Figures 6 and 7 – Photos from a community workshop with marginalised women (left) and natural dyeing experiments with ethically foraged plants (right) (The Witches of the East Collective, 2024).

learned about creating natural dyes from endemic plants and trees in their surroundings, along with ethical foraging practices to care for and dye their clothing and hamam fabrics.

Prior to the event, members of the Witches of the East Collective conducted site visits and informal interviews to understand the participants' lived experiences, local resources, and cultural knowledge. The workshop was co-designed with the local government and community representatives,

allowing local women to shape its content. Practical, hands-on sessions were combined with open dialogue, encouraging the exchange of ancestral knowledge, daily recycling and foraging strategies, and care practices. This relational, process-oriented approach prioritized co-learning and co-creation over product-focused outcomes. The use of accessible, locally available materials ensure inclusivity and emphasize sustainability. Embracing a situated knowledge framework, the Collective documented the workshop through visual journaling, oral storytelling, and collaborative textile-making, foregrounding the voices and agency of the women involved.

Their approach aligns with ecofeminist and slow design principles, emphasizing care, reciprocity, and sustainability. Through this collaborative ethos, Witches of the East transforms craft from an individual pursuit into a communal act of resistance, healing, and regeneration. Their work demonstrates that textiles can serve as both a medium for storytelling and a tool for activism, reinforcing the idea that true transformation happens not in isolation, but through shared experiences and collective action.

Discussion & conclusion

The Witches of the East Collective embodies a transformative approach to eco-feminist design, integrating nature's wisdom into textile and fashion practices to challenge dominant systems of production and consumption. By bridging craftivism, ecofeminism, and sympoiesis, the Collective reimagines textile-making as a tool for ecological restoration and community healing.

By reclaiming and reimagining discarded materials, designers as members of the Collective not only challenge the destructive patterns of the fashion industry but also cultivate a deeper, regenerative connection with the environment and its living systems. Through circular design methods such as upcycling and repurposing as well as ethical foraging and biodesign, the act of clothing creation becomes a powerful tool for healing, empowerment, and solidarity.

Unlike Western feminist and craftivist movements, which often focus on reclaiming domestic crafts as political tools, the Collective draws inspiration from Anatolian culture, indigenous healing practices, and ecofeminist spirituality. Their decentralized approach prioritizes ancestral wisdom, collective authorship, and regenerative practices over industrialized creativity and labor. Through slow and circular design methods, the projects they develop aim to nurture both people and the planet, resisting extractive economies.

Their approach to eco-feminist design is particularly significant within the context of modern Türkiye, where the role of women in fashion and textile production has been historically shaped by state-led modernization

and Westernization policies. They reclaim textile and fashion practice as a decentralized, fluid and sympoietic one that is community driven. Their participatory workshops and collaborative design pieces cultivate an interconnected vision—one that fosters a more just, inclusive, and ecologically conscious future. In doing so, they prioritise interspecies collaboration, feminist solidarity and the healing potential of collectives. By intertwining craft, activism, and nature-based spirituality, the Witches of the East Collective offers a radical alternative to dominant feminist and craftivist paradigms.

The Witches of the East Collective also faces several challenges in their work with marginalized communities and traditional knowledge systems. Main concerns include ensuring genuine collaboration and co-authorship, rather than reinforcing hierarchies or speaking on behalf of local participants. Ethical engagement requires a high level of sensitivity to cultural appropriation, particularly when drawing on Anatolian shamanic and healing practices, as well as a critical awareness of how local knowledge is shared, represented, and potentially extracted. Questions of fair compensation, labor equity, and social and economic impact of the workshops are also vital. The Collective ensures that the outcomes of their workshops are open source and not commercialized, emphasizing accessibility, transparency and community ownership.

The Witches of the East Collective operates as a non-profit initiative, driven by values of care, solidarity, and ecological justice rather than commercial gain. This enables the Collective to remain independent and true to their ecofeminist and craftivist principles. However, working outside of market-driven structures also brings its own challenges, especially in securing local funding.In Türkiye, the limited support for grassroots, activist, and environmentally conscious art and design practices leaves the Collective facing financial uncertainty, relying on grants, international collaborations, and community-based support to sustain its activities.

REFERENCES

Baumgardner, J., & Richards, A. (2010). *Manifesta: Young women, feminism and the future*. Farrar, Straus & Giroux.

Bratich, J. Z., & Brush, H. M. (2011). Fabricating activism: Craft-work, popular culture, gender. *Utopian Studies, 22*(2), 233–258.

Buckley, C. (1989). Made in patriarchy: Toward a feminist analysis of women and design in design discourse. In V. Margolin (Ed.), *Design discourse* (pp. 251–262). Chicago Press.

Chansky, R. A. (2010). A stitch in time: Third-wave feminist reclamation of needled imagery. *Journal of Popular Culture, 43*(4), 681–700. https://doi.org/10.1111/j.1540-5931.2010.00765.x

Ehrenreich, B. & English, D. (1993). *Witches, midwives, and nurses: A history of*

women healers. The Feminist Press at CUNY.

Greer, B. (2014). Knitting craftivism: From my sofa to yours. In B. Greer (Ed.), *Craftivism: The art of craft and activism*. Vancouver: Arsenal Pulp Press.

Groeneveld, E. (2010). Join the knitting revolution": Third-wave feminist magazines and the politics of domesticity. *Canadian Review of American Studies, 40*(2), 259–277.

Haraway, Donna (2016). *Staying with the trouble: Making kin in the Chtulucene*. Duke University Press. ISBN 978-0-8223-6224-1.

Mies, M and Shiva, V (2014). *Ecofeminism (Critique, influence, and change)*. Zed Books.

Parker, R. (2010). *The subversive stitch: Embroidery and the making of the feminine*. Bloomsbury Academic.

Peirats, A. (2023). *Female marginalized professions of late medieval European society*. Preprints.org. https://doi.org/10.20944/preprints202312.1371.v1

Reed, R. (2021). *Reclaiming childbirth as a rite of passage: Weaving ancient wisdom with modern knowledge*. Word Witch Press.

Shiva, V. (2010). *Staying alive: Women, ecology, and development*. South End Press.

Warren, K (2000). *Ecofeminist philosophy: A Western perspective on what it is and why it matters*. Rowman & Littlefield Publishers.

Witches of the East Collective (2023). *A sympoietic fashion practice: Ties*. Turkish Textile Biennial.

Witches of the East Collective (2024). *States of the bath: Touching water & soap*. Art Meet Izmir.

For the love of wool

A review of activists shifting the wool paradigm through crafts, design and sustainability

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ABSTRACT

Enabling a better future by doing, making, consuming differently to what the capitalistic and Antrophocene system dictates, represents an heroic and committed act of resistance (Fletcher & Tham, 2019) involving an activist attitude (Fuad Luke, 2009; Rawsthorn, 2018) discordant to the current understandings of value, growth and wealth. The paper reviews the action undertaken by some committed initiatives based in Portugal and Spain, aiming to enhance the value of wool as a positive path to conduct regenerative sustainability and support equal and equitable sociocultural innovation (Burgess, 2019). Nowadays, most of the wool is composted, burned, or wasted, because of its devaluation. While Australia, New Zealand and China centralise the market, the ancient perception of Spanish merino wool as "the White Gold" has been left behind against the synthetic and fuel-based fibres growth. The activists presented hereby recognise wool value as sustainable high-quality fibre and highlight the relevance of wool culture in regenerating natural ecosystems, preserving sustainable and ancestral ways of living (Rebanks, 2022) and compiling heritage and knowledge transmitted from centuries between generations (Fernandes, 2012). From a transdisciplinary perspective where arts, crafts, design, farming, and making interconnect, these initiatives compound an assemblage of farmers, shepherds, entrepreneurs, organisations, communities, designers, artists and DIY makers. The article intends to give visibility to this ecosystem that is shifting the paradigm of wool through collaboration, innovation, and sustainable practices (Sendra, Ferreira & Duarte 2023).

KEYWORDS

Wool, social innovation, sustainability, crafts, collaboration

Introduction

Enabling a better future by doing, making, consuming differently to what the current paradigm of the capitalistic and Antrophocene system dictates, represents an heroic and committed act of resistance (Fletcher & Tham, 2019) that involves an activist attitude (Fuad Luke, 2009) discordant to the current understandings of value, growth and wealth. The contemporary capitalistic economic, industrial and consumption paradigm has brought many challenges to our planet. One of the significant factors polluting the earth is the fashion and related textile industry, which is responsible for 10% of global emissions (Earth, 2024) and the exponential market of fuel-based textiles has a great responsibility in it. According to the last Materials Market Report, the rise of fossil-based synthetics production increased from 67 million tonnes in 2022 to 75 million tonnes in 2023 (Textile Exchange, 2024, p. 4). Meanwhile, sheep wool production accounts for 0.9% of the global fibre mark (Textile Exchange, 2024, p. 5) and represents only 2% of the fibres used, against plastic-based which represent up to 70% (EEA, 2024) despite the ecological impact they generate. After decades of declining value because of fuel-based textiles production and consumption, the quality of wool is affected by a lack of investment, genetic analyses, care and industry's destructuration.

In a world in urgent need of sustainable and regenerative ways of living, where degrowth perspectives and slow approaches to consumption (Fletcher, 2010) can play a role in fighting the 1.5 degree rise, it seems unbelievable that wool, an historic fibre associated with ecologic and conscious ways of living, represents nowadays a waste problem. Alternatives to the fuel-based textile industry are needed and the enhancement of wool production-consumption network seems a relevant alternative if we do not wish to witness the extinction of a whole transdisciplinary sector that supports rural communities while fosters sustainability and involves a rich cultural heritage integrating ancestral knowledge, craftsmanship techniques and trade economy (Magni, 2016).

In Spain, around 21.000 tonnes of wool were produced in 2023 according to the Statistical Operation of Wool, Honey and Other Livestock Productions (Ministry of Agriculture, Fish and Food, 2024). However not all wool produced is processed and sold. Since the Asian market closed the door to the European market because of the epidemics occurring in 2019, the value of wool decreased to the point that it became a waste issue (Mutur Beltz, 2015). Wool is then accumulated in farms and becomes a serious waste management problem, most of it being composted, burned, or wasted, because of its devaluation. The fast fashion industry and consumers prioritise fuel-based textiles because of their availability and cost. From farming to knitting, the natural fibre used throughout millennia BC has become a waste problem because of the increasing use of synthetic fibres in clothing and the textile industry in general.

Wool is transsectorial and its current situation affects several sectors because of their interdependence. A lack of consumption of wool products impacts the farming, artisan and industrial sectors. It affects wool care and native sheep breeds. As its wool use is neglected and its value under-rated, shepherds and farmers tend to prioritise meat trade purposes, which affects the quality of wool, bringing wool into a vicious circle (Fademur, 2022).

Framework and purpose

This article, undertaken in the framework of a doctoral thesis, is informed by a desk review of digital and library archives, an online survey, field visits, interviews and short questions held online and offline conducted by the research team. The objective is to give visibility at the scientific level of this activist and assembled ecosystem shifting the paradigm of wool culture from reflection, collaboration, innovation, and sustainable practices. The article aims to recognise the values of arts, creativity, crafts and design and how they can transform social dynamics (Sendra, Ferreira & Duarte, 2023) and shift the paradigm of wool and presents an rhizome of activists acting from different dimensions for the same purpose (Deleuze & Guattari, 1987, p. 6).

For the love of wool

> Every design action is a political act that concretizes power and authority.

> (Hester, 8-15)

The wool sector needs a holistic response that integrates political, social, economic and cultural actions (Ministerio de Cultura, 2024). Despite the many challenges confronted by the sector, many people believe in the power of wool and how beneficial its use and production are.

"For The Love of Wool" article reviews the work undertaken by a representative number of initiatives based in Portugal and Spain, which through art, crafts and design fight to enhance the value of wool, a sector that spillovers to regenerative sustainability and supports equal and equitable sociocultural innovation (Mutur Beltz, 2024). Activists hereby cross boundaries and interconnect to highlight the role of wool culture in regenerating natural ecosystems, preserving sustainable and ancestral ways of living and compiling heritage and knowledge transmitted from centuries between generations. From a transdisciplinary perspective where arts, design, farming, and making play a pivotal role, these heroic initiatives compound an activist assemblage of multiple, but not exclusive, farmers, shepherds, entrepreneurs, organisations, communities, designers, artists and DIY makers practicing and interacting for the common good and making wool shine again.

Preserving the last ones

In a country like Portugal, 16 native sheep breeds (DGAV) are officially recognised, while 51 exist in Spain (MAPA). However more than half of them are at risk of extinction in both countries. Preserving native breeds is directly linked to biodiversity and FAO (2016) strongly recommends governments to implement programmes to prevent extinction and the loss of genetic heritage (Bernardo, 2018, p. 60). Protecting native sheep is in line with landscape protection, as their morphology and characteristics are very much linked to the territory and bioclimate conditions they originate from (Bernardo, 2018, p. 60; Mutur Beltz, 2024).

Protecting Karranzana black face sheep motivated Laurita and Joseba to start a family project that enhances the value of wool to avoid its waste and promotes the native breeds of their community in the Karranza Valley, situated in the Basque Country (Spain). *Mutur Beltz*[1] (black face in the Euskera language) is the name of their initiative, recently awarded by Fundesarte, Spanish entity for promoting artisanship, with the National Artisanship Prize for Entrepreneurship. Confronting the challenges affecting sheep farming and wool production, *Mutur Beltz* combines agroecology, textile crafts, art, and design to generate sustainability and cultural innovation while fostering the values of their breeds and those of the community regarding meat, milk and wool. During the artistic residencies they organise annually, artists from different disciplines are invited to spend some days discovering and working with their wool. They innovate into the sector by bringing wool into a transdisciplinary dialogue with other crafts and artistic practices such as embroidery, patchwork, weaving, illustration, or even music. In collaboration with local partners they brought wool to music concerts, artistic installations or restaurant menus. They have established relevant collaborations with brands like Lastur, Ternua y Mugaritz, to bring innovation and development (I+D) by finding new and sustainable uses for wool through contemporary design and crafts (Fundesarte, 2024).

> It seems to me that we're slowly co-creating a growing community, and through this reanimation, we're finding processes to connect with the natural world, and through connecting with the natural world, connect with ourselves as natural bodies.[2]
>
> (Mutur Beltz, 2023)

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1 Cf. https://muturbeltz.com/

2 Free translation by the author: "Me parece que lentamente estamos co-creando lentamente una comunidad que está creciendo y encontramos por medio de esta reanimación procesos para conectar con el mundo natural y por medio de conectar con el mundo natural, conectar con nosotros mismos como cuerpos naturales."

Another example of activism to fight the extinction of native breeds, is the campaign for the *Churra Badana* sheep native to the Bragança region in northeast Portugal, classified as rare and in serious risk of extinction, launched by designer Rosa Pomar, who is known by her work in promoting Portuguese wool around the world, through her Retrosaria company and social networks. *Churra Badana* is very much related with a specific micro-clima and the use of its wool was mainly associated with local carpets (DGVA).

Those are only two examples of how culture can preserve, raise awareness and enhance the value of native sheep breeds and their relevance at the cultural, social, economic, and environmental level in the territories where they are associated.

Pastoralism as a way of living in nature and regenerating the landscape

While preserving the regional sheep, *Xalda asturiana*, Marina from *La Flor Cerval*[3], established a family project in the mountains of the western Asturias region (Spain) to enhance the values of pastoralism as a model of sovereignty and way of living in connection with nature and the territory, based on sustainable values. Through their approach of caring for the land they launched the *La Flor Cerval* project to manage wool waste produced by their breed and other neighbours and shepherds of the region while finding alternatives to polluting and capitalistic consumerism values. By bringing into the market firstly, sustainable and artisanal wool for crafts and lately, wool-based clothing elements with rustic aesthetics, they are an example of rural revitalization supporting landscape preservation, biodiversity conservation, and cultural territory identity. As they defend the beauty of rusticity and the pastoral farming way of mountain living, they adopted *La Flor Cerval*, which means wild flower, as their brand identity name. Pastoralism and shepherding are associated with rural communities and have a relevant impact in fixing population in rural areas and landscape regeneration by controlling nature development, disseminating seeds and pollen, and fertilising the soil (FAO, 2016).

In Portugal, the *Lãnd Innovation Week*[4] is a programme established annually by the Municipality of Manteigas in partnership with ADIRAM - Association for the Integrated Development of the Aldeias de Montanha Network that involves the local community, local entreprises and the academia. The initiative aims to enhance the connection between the territory, the shepherds and the rural communities living in the Manteigas

3 Cf. https://www.laflorcerval.com/

4 Cf. https://land-week.com/

mountain region. Through innovation, creativity, and collaboration they foster the values of local sheep wool, *bordaleira* and *churra mondegueira* native breeds from the Serra da Estrela mountains. Their artistic residencies, design awards, talks, workshops and exhibitions are some of the activities implemented by the entity to raise awareness of the values of wool as a sustainable raw material with potential future while fostering Manteigas as a creative hub for wool and pastoralism.

Wool is Waste(d)

Wool has become a serious problem for farming families and shepherds as its value has decreased from around 3 euros some years ago, to less than 0.30 euros during the last campaign. Identified as a farming waste (Figure 1) if brought out of the farm it needs to be manipulated by certified entreprises which generates strong logistical and costly issues to farmers.

Underevaluated, wool becomes a waste issue if brought to a dump or an environmental issue if burned. The problem brought *Lana Merimorena*[5], a Spanish initiative in Cortegana (Huelva) to work with local authorities and partners from Portugal through the cross-border project RAIA to find a solution to the 250 thousand kilos of wool produced in the region. Besides offering training sessions to local farmers for composting wool and generating a positive impact into the environment and the agriculture production of the local community, since 2021 *Lana Merimorena* aims to enhance this raw material by offering products made by local artisans and other national initiatives as well as researching, raising awareness and training. Managed by three craftwomen, *Lana Merimorena* works based on partnerships, artisan processes and social transformation in the territory.

Based in Cantabria (Spain), *Lana Robla*[6] is an initiative aiming at solving the issue of wool waste in the Valles Pasiegos region, where its founder, Aitor Saraiva, a Spanish artist and illustrator lives. In association with a local shepherd, Josito, they have collected as much wool as possible to save it from waste. By mixing wool from different local sheep breeds, they brought to the market a fibre perfect for crafts and artistic use, specially those naturally dyed by the artist.

From farm to clothing: tracing the values of wool

Rosa Pomar[7] launched her crafts shop in 2008 while teaching the craft of knitting and researching Portuguese textiles heritage and native

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5 Cf. https://lanamerimorena.com/

6 Cf. https://www.instagram.com/lanarobla/

7 Cf. https://retrosaria.rosapomar.com/

Figure 1 – Wool waste from my neighbours (Author, 2024).

Figure 2 – Wool cardigans designed by Rosa Pomar and made from the fleece of Portuguese sheep breeds (Source: Rosa Pomar).

Figure 3 – *Chaos is a Diva work* by Ana Rita Arruda exhibited at New Hand Lab (Author: Alice Bernardo. Source: Ana Rita Arruda).

sheep breeds. As a result of her research field work with shepherds, farmers, artisans and the remaining wool industry, she has created a range of yarns made of Portuguese wool, some of which are handspun by skilled artisans using traditional tools and methods. Her yarns are

sold globally and she has enhanced the values of Portuguese wool around the globe through campaigns, knitting kits, and traditional patterns. As a designer, Rosa Pomar offered firstly wool materials for crafts purposes, generating a conscious community of knitters committed to using sustainable materials when making clothes. Nowadays, she also designs and produces ready-to-wear clothing elements made by her yarns (Figure 2). Her designs and yarns transmit the values of high-quality, durability, traceability and reduced ecological footprint.

Wool4Life[8] is a Spanish initiative based on family legacy, sustainability, and traceability. By bringing together wool, crafts and design, they act in every stage of the wool process to ensure it is enhanced in the whole value-chain. Wool4Life bases its values on the luxury of making things better and wearing values. Through their platform they offer home textiles and clothing accessories made with different wools produced by WoolDreamers parent company. In partnership with two artists, Regina de Jimenez and Ines Sistiaga, and the Madrid Design Festival 2025, they have developed an exhibition called *Oro Blanco* within the initiative *Tejiendo Redes*[9] to enhance the values of wool and its potential when seen from the perspective of arts, design, crafts and cultural heritage. The initiative's name recalls the recognition of the Spanish wool industry at the European level in the XVI century as the White Gold.

Preserving the heritage

The work of wool is associated with a rich cultural heritage and ancestral knowledge related to the land, sheep care and fibre processing. Many are the artisans handling the whole process directly with wool fibre from the sheep to produce textiles.

It is the case of Paz Mesa[10] in Asturias (Spain), who makes her own textiles using traditional techniques, sustainable practices and naturally dyes her own fibres. She spreads her knowledge through workshops and training. In Portugal, Paula Neves[11] conducts a similar initiative in the Alentejo region. With her breed of merino sheep, she prepares her own yarn to weave according to traditional techniques and inspired by local traditions. She also organises activities to experience their rural living and wool process in the farm while creating products and selling her wool products and tools.

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8 Cf. https://wool4.life/en

9 Cf. https://madriddesignfestival.lafabrica.com/tejiendo-redes/

10 Cf. Paz Mesa https://pazmesa.art/

11 Cf. https://paulaneves.pt/

Wool expressive and innovative material

The use of wool implies many benefits because of its qualities as renewable, recyclable and biodegradable raw material for building insulation, cosmetics, and fashion industries. Wool means a message of sustainability. Beyond its utilitarian use (Eco Museo La Ponte, 2024), wool has been adopted as a medium to express messages artistically. Nowadays, in a world where the boundaries between crafts, arts and design are more liquid and allow more interconnections (Reubens, 2019). In both countries, Spain and Portugal, many artists, artisans and makers use wool as their principal vehicle of expression.

Regina de Jimenez[12], Spanish artisan/artist, recognises wool as a powerful medium to express her work, which involves sustainability values and it's interlinked with Spanish heritage. Her contribution to the installation of the Madrid Design Festival 2025, "Oro Blanco" (White Gold) extols the potential of character of expression and language of wool. From her side, Ana Rita de Arruda[13] is a Portuguese artist who through felting uses wool as a medium of expression. She pushes wool felting to the maximum potential of plasticity and organic character (Figure 3), she builds her narrative through wool.

Artistic events such as *Contextile*[14] in Guimaraes, the *Trienal of Design 2025*[15] in Covilha or the *Madrid Design Festival 2025*[16] translate this relevance of wool as a tool of language and medium of expression. It is a fight for recognising the importance of wool as a sustainable material and its lifestyle associated with as a form of living and opportunity for sociocultural and economic development in line with sustainability and social innovation values.

Conclusions

The initiatives hereby are only a humble part of the relevant number of committed activists working in favour of wool in Spain and Portugal. These initiatives go beyond the urban artistic and colonialistic approach of cultural practice and are born from the deepest challenges affecting rural areas. Some of them correspond to a "rural art practice that works from within rural situations, and often together with rural communities" (MyVillages, 2019, p. 13).

12 Cf. https://reginadejimenez.com/

13 Cf. https://anaritadearruda.com/

14 Cf. https://contextile.pt/en/

15 Cf. https://trienaldesigncovilha.pt/en/home-eng/ 2025

16 Cf. https://madriddesignfestival.lafabrica.com/tejiendo-redes/

Case studies reveal the impact supporting wool can generate new opportunities at the rural level by supporting employment, strengthening the links between urban and rural areas, preserving trades and jobs at risk of extinction as shepherds and revitalising cultural heritage and countryside communities (Fademur, 2022).

Through crafts, design and arts, those initiatives generate spaces for collaboration, enlarge the range of possibilities and democratise the creative experience (Rural Experimenta IV, 2024). Design can contribute to integrate wool in different sectors by proposing sustainable and durable solutions in fashion, furniture, decoration, acoustics, and contemporary crafts.

"El arte tiene un poder enorme para enlazar, para conjugar realidades y ofrecer posibilidades" ("Art has an enormous power to connect, to combine realities and offer possibilities.") (Rural Experimenta IV, 2024).

Having in mind the potential natural resource wool represents and its qualities and potential characteristics (Wiedemann, 2020; Fademur, 2022) the initiatives presented are few seeds of an activist and committed vision of life that embrace a new paradigm based on the values of sustainability, collaboration and transdisciplinarity. Motivated by the strength and innovative vision, it is worth supporting through crafts and design transformations engaged with the territory, the land and the community as a vector of sustainability in rural areas.

As a rhizome, they act from their own context to defend the same cause: the values of wool in a context urgently needing regenerative and non-polluting alternatives that foster social innovation and sustainability while enhancing cultural heritage and ancestral knowledge. Their motivations and approaches are interconnected and not linear, but multiple, from different dimensions they have in common their love for wool.

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REFERENCES

Bernardo, A. (2018). Portuguese Wool. *Spin Off*. Retrieved from: https://www.saberfazer.org/research/la-portuguesa-spin-off

Burgess, R. (2019). *Fibershed: Growing a movement of farmers, fashion activists,*

and makers for a new textile economy. Chelsea Green Publishing Co.

Deleuze, G., & Guattari, F. L. (1987). *A thousand plateaus: Capitalism and schizophrenia* (B. Massumi, Trans.). Minneapolis, MN: University of Minnesota Press. https://files.libcom.org/files/A%20Thousand%20Plateaus.pdf

Direção Geral de Alimentação e Veterinária (DGAV) (n.d.). *Catálogo oficial de raças autóctones portugueses*. https://www.dgav.pt/wp-content/uploads/2021/04/Catalogo-Oficial-Racas-Autoctones-Portuguesas.pdf

Hester, R. (2005). Design Activism… For Whom?. *Frameworks 1* (Spring), 8-15.

Ministerio de Agricultura, Pesca y Alimentación (MAPA) (n.d.). *Catálogo de razas ganaderas.*

https://www.mapa.gob.es/es/ganaderia/temas/zootecnia/razas-ganaderas/razas/catalogo-razas/

Ministerio de Agricultura, Pesca y Alimentación (MAPA)(2023). *LANA: Análisis provincial del número de animales esquilados.* https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/lana-23-web_tcm30-687687.xlsx

Ministerio de Cultura (2024). *Rural Experimenta IV.*

https://culturayciudadania.cultura.gob.es/cultura-medio-rural/rural-experimenta-4.html

Mutur Beltz (2023). *Entrevista a Adrian Pepe. VII Residencia Artística del Buen Vivir 2023.* https://youtu.be/vJYWR9xY_rs?feature=shared

Mutur Beltz (2015). *Documental Mutur Beltz* [video]. YouTube. https://youtu.be/73PR27d3xMA?feature=shared

Mutur Beltz (2024). *Shorts* [video]. YouTube. https://youtu.be/Hrzugte0pmI

Federación de Asociaciones de Mujeres Rurales (FADEMUR)(2022). *Manual de usos de la lana en España. Proyecto El Batán de las Mujeres.* https://fademur.es/fademur/manual-de-usos-de-la-lana-en-espana/

Fletcher, K. (2010). Slow fashion: An invitation for systems change. *Fashion Practice: The Journal of Design, Creative Process & the Fashion Industry*, *2*(2), 259–266. https://doi.org/10.2752/175693810X12774625387594

Fletcher, K. and Tham, M. (2019). *Earth logic fashion action. Research Plan*. The J J Charitable Trust. https://earthlogic.info/wp-content/uploads/2019/12/Earth-Logic-eversion.pdf

Food and Agriculture Organization of the United Nations (FAO) (2016). *The contributions of livestock species and breeds to ecosystem services*. United Nations. Retrieved from: https://www.fao.org/3/i6482e/i6482e.pdf

Fuad-Luke, A. (2009). *Design activism: Beautiful strangeness for a sustainable world* (1st ed.). Routledge. https://doi.org/10.4324/9781849770941

Fuente Corripio, L. L. (2024). *Proyecto Europeo Culturality. Sinergias culturales para la resiliencia rural. Culturality European Project. Cultural synergies for rural resilience* (Cuadiernu N° 13). Eco Museu La Ponte. https://laponte.org/cuadiernu/cuadiernu-no13/proyecto-europeo-culturality/

Fundesarte. (n.d.). EOI. https://www.eoi.es/es/conocenos/fundesarte

Hou, Jeffrey & Boone, Kofi & Bose, Mallika & Cheng, Chingwen & de la Pena, David & Langhorst, Joern & Lawson, Laura & Rios, Michael & Ruggeri, Deni & Stevens, Julie. (2020). *Design As Activism/ Landscape Architecture Education for Social*

Change: A Framework for Actions and Other Propositions. Retrieved from: https://www.researchgate.net/profile/Jeffrey-Hou-2/publication/371939199_Design_As_Activism_Landscape_Architecture_Education_for_Social_Change_A_Framework_for_Actions_and_Other_Propositions/links/649cc00b95bbbe0c6efda6c5/Design-As-Activism-Landscape-Architecture-Education-for-Social-Change-A-Framework-for-Actions-and-Other-Propositions.pdf

Mulrean, C. (n.d.). Earth.Org. Earth.Org. https://earth.org/

European Environment Agency's home page. (n.d.). https://www.eea.europa.eu/ Textile Exchange (2024). *Materials market report.* https://textileexchange.org/knowledge-center/reports/materials-market-report-2024/

Papanek, V.J. (1984). *Design for the real world: Human ecology and social change.* Van Nostrand Reinhold.

Perez, M. (2024). *Lana y arraigo. Jornadas de Patrimonio Cultural. Proyecto Culturality. Eco Museu La Ponte.* https://www.youtube.com/live/5b3KWCb8hks

Rawsthorn, A. (2018). *Design as an attitude.* JRP Ringier.

Reubens, R. (2019). *Holistic sustainability through craft-design collaboration.* Routledge. https://doi.org/10.4324/9781351065665

Rebanks, J. (2015). *The shepherd's life.* Flatiron Books.

Wiedemann, S. et al. (2020). Environmental impacts associated with the production, use, and end-of-life of a woollen garment. *International Journal of Life Cycle Assessment, 25*(7), 1486–1499. https://doi.org/10.1007/s11367-020-01766-0

Weaving resistance

Art, agroecology and community collaboration in Neve Insular

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ABSTRACT

Since its inception in 2018, *Neve Insular*—an independent artistic collective based in São Vicente, Cape Verde—has been cultivating cotton as a symbolic and material gesture. Integrating agroecology, art, and education, the project reactivates ancestral knowledge linked to panú di téra, the traditional woven cotton cloth, through practices of cultivation, transformation, and community co-creation. Collaborating closely with the Associação Agropecuária do Calhau e Madeiral, the collective initiated an experimental organic cotton plantation of 300 m², which expanded to 800 m² by 2021. Their activities include agroecological training, artistic residencies, collective harvests, and school workshops, engaging women, farmers, artisans, and children.

This paper documents recent developments within *Neve Insular*, including the 2021 and 2023 editions of the *Mulheres do Vale* programme, which trained women in the Ribeira do Calhau and Madeiral regions in cotton spinning, natural dyeing, and weaving. It explores how these co-creative processes—conducted at the Centro Agroecológico do Madeiral—generate inclusive, decentralized frameworks of cultural and environmental sustainability, grounded in local resilience and material experimentation. The analysis draws on field documentation, interviews, and critical reflection, positioning *Neve Insular* as a living archive of collaborative artistic resistance. In doing so, it reflects on how artistic practices—embedded in land, fibre, and care—can respond to socio-political and environmental challenges in postcolonial contexts.

Introduction

Operating at the intersection of artistic practice, agroecology, and social engagement, *Neve Insular* is an independent Cape Verdean project that reactivates ancestral knowledge related to cotton cultivation through creative, collaborative, and ecologically driven practices. Grounded in the archipelago of Cabo Verde, the project reimagines cotton—a fibre deeply entangled with the histories of transatlantic labour and resistance—as both material and metaphor for resilience, repair, and cultural continuity. Building on earlier research into the project's methodologies and conceptual trajectory (Nolasco, 2004), this article explores recent developments and socio-environmental impacts. It considers how *Neve Insular* fosters what Sennett (2012) describes as "collective care," blending individual initiative with community well-being. Framed as a "living archive" (Mbembe, 2002), the project engages material culture as a means to activate memory and enable dialogue between past and present.

Initiatives such as *Mulheres do Vale II*—held in 2023 at the Centro Agroecológico do Madeiral—illustrate *Neve Insular*'s commitment to agroecological education and the empowerment of rural women in the Ribeira do Calhau and Madeiral regions. These programmes combine craft-based learning with ecological awareness and socio-economic agency. Participation in international platforms, such as *XTANT Roots 2024* (Palma de Mallorca, Spain), further reflects the project's role in global discussions on sustainability and cultural resilience. Similarly, the talk *Contemporary Perspectives on Resistance in the Island* (Palma de Mallorca, 2024) and the exhibition *Neve Insular 0,0003% – Cotton and Resistance* (Centro Cultural de Cabo Verde, Lisbon, 2023) exemplify the project's interdisciplinary approach to art and ecology within postcolonial contexts (Rainho, 2022; Herzfeld, 2004).

This study draws upon critical analyses by Rainho, visual documentation from exhibitions, and informal interviews with participants to provide a comprehensive view of *Neve Insular's* evolving methodology. Together, these sources illuminate the project's potential as a catalyst for community transformation amid environmental degradation and postcolonial recovery (Rainho, 2021a; Shiva, 2008). Conceptually, the project engages with assemblage thinking (Deleuze & Guattari, 1987; Marcus & Saka, 2006) and social creativity (Gauntlett, 2011), which frame community-based practices as dynamic constellations of relations among people, materials, and ecologies. These perspectives support sustainable systems of care and resistance and align *Neve Insular* with broader discourses on resilience and the transformative potential of creative practice (Thorpe, 2008). By examining the interplay between local materialities and global dialogues, this article positions *Neve Insular* as a compelling model of how artistic engagement can address contemporary challenges while preserving and adapting cultural heritage.

Reclaiming histories, building futures

The Neve Insular project

Responding to the historical erasure of cotton cultivation in Cabo Verde, *Neve Insular* emerged as a practice of cultural reactivation and ecological experimentation. Cotton, once central to the colonial economy of the archipelago, is reimagined not only as a material resource but also as a medium of memory, care, and collective imagination. The project reweaves forgotten narratives, transforming a landscape shaped by forced labour into a field for artistic and agroecological renewal. At the heart of this approach is the notion of cotton as a "material archive"—a fibre that embodies layered histories of resistance, migration, and exploitation (Rainho, 2022). Through cultivation, spinning, weaving, and shared authorship, *Neve Insular* mobilises this archive to reclaim agency and to reinterpret the artisanal tradition of panú di téra within contemporary artistic frameworks (Nolasco, 2004; Rainho, 2021a). The fibre becomes a vehicle for reshaping not only material culture but also systems of knowledge and care.

The project began with small-scale agroecological experimentation in the Madeiral valley, in collaboration with the Associação Agropecuária do Calhau e Madeiral (AAPCM). Rejecting monoculture, the collective adopted a biodiverse planting system that integrates cotton with native species, restoring traditional practices through sustainable farming methods. Community workshops focused on the full cotton cycle—from seed selection and natural dyeing to weaving and textile design—reviving knowledge while fostering a deeper relationship with the land. Theoretical underpinnings are drawn from assemblage thinking and the concept of the living archive (Deleuze & Guattari, 1987; Mbembe, 2002). *Neve Insular* is conceived not as a fixed model but as a relational constellation of practices that shift with seasonal cycles, social needs, and creative possibilities. This mode of working challenges extractivist paradigms by proposing an interdependent approach to culture and development. The project speaks directly to socio-political and environmental crises in Cabo Verde—namely, prolonged droughts, rural depopulation, and the erosion of local knowledge systems (Shiva, 2008; Thorpe, 2008).

One of the most significant outcomes of this methodology is the *Mulheres do Vale II* programme, held in 2023 at the Centro Agroecológico do Madeiral. This initiative combined agroecological training with feminist pedagogy, placing women from the Ribeira do Calhau and Madeiral regions at the centre of the cotton revival. The programme engaged participants in spinning, natural dyeing, and textile-making, while also encouraging collective reflection on care, authorship, and environmental stewardship (Rainho, 2021b). These activities fostered intergenerational knowledge transfer and deepened the women's roles as cultural and ecological agents.

Rather than scaling up through institutionalisation, *Neve Insular* has grown organically, adapting its methods in response to changing climatic, economic, and social conditions. For instance, decreased rainfall in recent years has led to the prioritisation of fibre transformation over field expansion, with a renewed focus on preserving the seeds, knowledge, and rituals of the cotton cycle. Simultaneously, the project's engagement in transnational networks—such as the *XTANT Roots 2024* conference in Palma de Mallorca—reflects its capacity to articulate local practices within broader conversations on postcolonial resistance and regenerative culture. Through its commitment to horizontal collaboration and material experimentation, *Neve Insular* exemplifies how creative processes can sustain cultural memory while addressing contemporary urgencies. The project offers not a fixed model, but a fluid, participatory platform where land, knowledge, and imagination converge.

Recent developments in the Neve Insular project

One of the most significant recent milestones in *Neve Insular*'s trajectory has been the *Mulheres do Vale II* (MdV II) programme, held in October 2023 at the Centro Agroecológico do Madeiral. Building upon earlier community initiatives, the programme engaged ten women from the Ribeira do Calhau and Madeiral regions in ten days of intensive workshops on cotton cultivation, fibre transformation, and agroecological practices. Supported by the Instituto Camões and partners such as Santa Cruz Boutique Hotel and Retrosaria Rosa Pomar, the initiative combined practical training—spinning, natural dyeing, and weaving—with moments of collective reflection and local celebration (Rainho, 2021a).

MdV II promoted women's autonomy and strengthened their connection to both land and cultural heritage. Participants assumed active roles as mediators of agroecological knowledge, sharing practices within their communities and contributing to public presentations. The final exhibition, held in the project's own nursery-gallery space in Madeiral, featured fibre samples, weavings, and ceramic forms created collaboratively, including cheese moulds referencing the stylised shape of the cotton flower. In earlier instances, such as the 2021 exhibition at *Rbera – Residência Artística*, similar works were presented by previous groups, establishing a growing corpus of collective production.

Internationally, *Neve Insular*'s presence at the *XTANT Roots 2024* conference offered an opportunity to share these methodologies with a broader audience. The collective—represented by co-founders Rita Rainho and Vanessa Monteiro—participated in the panel *Contemporary Perspectives on Resistance in the Island: Relationships and Hybrids Around Cotton*, which explored the project's material and symbolic entanglements. Concurrently, the pop-up exhibition *Neve Insular 0,0003% – Cotton and*

Figure 1 – Participants of the *Mulheres do Vale II* programme during a cotton-spinning workshop at the Centro Agroecológico do Madeiral, October 2023 (Neve Insular archive).

Figure 2 – Detail of *Banda NI – Janelão em ráfia*, exhibited in Lisbon, 2023 (Photo by Rainho).

Figures 3 – Students at Escola Primária da Ribeira do Calhau experimenting with cotton spinning, 2023 (Photo by Monteiro).

Resistance, installed at the historic Palau Can Vivot in Palma de Mallorca, featured site-responsive textile installations and sculptural pieces crafted from organic cotton, raffia, sisal, and ceramic elements (Rainho, 2022).

Beyond its pedagogical role, *Neve Insular* continues to explore new material expressions through its artistic practice. The piece *Banda NI –*

Janelão em ráfia, developed during the *Rbera – Residência Artística* in 2022, exemplifies this interdisciplinary approach. Combining traditional Manjako weaving techniques with contemporary design elements, the work evokes historical codes embedded in fabric, while generating tactile interfaces for contemporary narratives of belonging and survival. Installed at the exhibition *Mundo Lusófono – A Pronúncia da Mulher no Design de Produto* (Lisbon, 2023), the piece was presented as both textile artifact and speculative cartography of memory (Mbembe, 2002; Herzfeld, 2004).

These multifaceted developments illustrate how *Neve Insular* is refining its working methods while nurturing a growing constellation of collaborators. By combining grounded pedagogy with site-responsive art-making, the project sustains a model of practice that prioritises local agency, ecological reciprocity, and shared authorship—expanding the possibilities for socially engaged artistic production in and beyond Cabo Verde.

Empowering communities through agroecology and art

By intertwining artistic experimentation with agroecological principles, *Neve Insular* demonstrates how place-based creative practices can generate meaningful social and ecological transformations. A core expression of this commitment is the *Mulheres do Vale II* (MdV II) programme, which brought together women from Ribeira do Calhau and Madeiral for ten days of collaborative learning. Through workshops on cotton cultivation, fibre transformation, and sustainable agriculture, participants acquired practical skills while co-constructing a shared space of reflection, mutual care, and empowerment (Rainho, 2021a). The programme also addressed the gendered dynamics of labour and knowledge transmission, affirming *Neve Insular*'s feminist orientation and its attention to the social textures of care.

This ethos extends to the younger generation through educational initiatives that introduce schoolchildren to the cotton cycle in ways that privilege tactile learning, oral history, and ecological awareness. From 2022 to 2023, *Neve Insular* facilitated workshops in local primary schools— including Escola Primária de Ribeira do Calhau and Escola de Madeiral— where students engaged in germination, spinning, and weaving activities. These sessions, developed in partnership with the Associação Agropecuária do Calhau e Madeiral, fostered a sense of environmental responsibility while embedding cultural literacy into local education frameworks (Nolasco, 2004; Shiva, 2008).

Beyond education, *Neve Insular* resists extractivist logics by creating value through collaborative artistic production. Exhibitions such as *Neve Insular 0,0003% – Cotton and Resistance* present handcrafted textiles and sculptural installations that operate simultaneously as aesthetic propositions and economic resources. These pieces enable local artisans

to access broader circuits of circulation and recognition, reinforcing the project's role in sustaining not only cultural memory but also viable economies of making (Thorpe, 2008). Through this dual activation—of tradition and transformation—the project reveals the potential of art as a regenerative force.

International engagements such as *XTANT Roots 2024* have further amplified *Neve Insular*'s approach. By contributing to transnational dialogues on sustainability, the project positions its methodologies as adaptable to diverse cultural and ecological contexts. Yet this outward reach never obscures its grounding in the archipelago: its actions remain rooted in the specificity of Cape Verdean geographies, temporalities, and social relationships (Mbembe, 2002).

The artworks produced within this framework act as a living archive, where historical fragments are not preserved in stasis but activated in the present. *Banda NI – Janelão em ráfia*, for instance, fuses traditional Manjako weaving techniques with contemporary design strategies, proposing a textile cartography that challenges colonial inheritances while affirming the poetic agency of material. Here, cotton ceases to be a symbol of dispossession and becomes, instead, a site of resistance, possibility, and care. As Rita Rainho has noted, the project "cultivates not just cotton but also the possibilities of care and resistance" (Rainho, 2022), offering a tactile language through which to imagine alternative futures.

By articulating agroecological knowledge, artistic processes, and community empowerment, *Neve Insular* creates a dynamic and participatory model of cultural sustainability. Grounded in Cabo Verde's lived realities yet resonating globally, the project offers critical insights into how creative assemblies can contribute to systemic change—locally situated, but globally relevant.

Social empowerment and systemic change

Neve Insular's interdisciplinary methodology illustrates how creative assemblies can catalyse systemic transformation, responding simultaneously to ecological degradation, cultural displacement, and social inequality. Yet, the project's evolution also brings forth critical reflections—particularly around questions of scalability, long-term sustainability, and the negotiation between tradition and innovation. These dimensions not only trace the project's trajectory but also help evaluate its potential as a replicable framework for situated cultural regeneration. The adoption of agroecological practices in the Madeiral valley is a notable example of how *Neve Insular* embeds sustainability into local landscapes. However, expanding these practices to other regions requires considerable adaptation. Agroecology is inherently context-specific; it demands continuity, specialised training, and systemic support

to thrive beyond its original setting (Shiva, 2008). In the case of cotton, this includes the careful transfer of knowledge and infrastructure, as well as ecological assessments to avoid replicating extractive models under the guise of sustainability.

Sustaining the project's principles over time also depends on stable partnerships and funding. Initiatives like *Mulheres do Vale II* generate tangible social benefits by equipping participants with tools for ecological stewardship and economic participation. Nonetheless, their longevity hinges on strong alliances—such as that with the Associação Agropecuária do Calhau e Madeiral—that align institutional objectives with community needs (Rainho, 2021a). Diversifying funding sources, including the exploration of cooperative economies or social entrepreneurship, could strengthen the project's financial autonomy and enhance its resilience. From a cultural standpoint, the integration of traditional and contemporary practices raises important questions around authorship, representation, and authenticity. Collaborations with local artisans have allowed *Neve Insular* to preserve intangible heritage while also pushing the boundaries of form and narrative. Yet, innovation must be negotiated with care. Pieces like *Banda NI – Janelão em ráfia* exemplify this delicate balance: honouring historical weaving techniques while articulating new aesthetic codes. These works act as living archives—not as static preservations of the past, but as evolving expressions rooted in dialogue and mutual recognition (Mbembe, 2002; Herzfeld, 2004).

As *Neve Insular* gains visibility on international platforms, such as *XTANT Roots 2024*, it extends its reach and contributes to broader discourses on decolonial sustainability. Still, such exposure requires significant resources and attention, raising concerns about the potential displacement of local engagement. Ensuring that international participation amplifies rather than redirects the project's energy is crucial. This calls for intentional strategies that protect the intimacy and integrity of community-based work while fostering global exchange. Most significantly, *Neve Insular*'s engagement with historically marginalised groups—particularly rural women—demonstrates its capacity to foster collective agency. Programmes like *Mulheres do Vale II* reposition participants as knowledge bearers and ecological leaders, opening pathways for sustained civic participation. To deepen this impact, the project could further engage with policy frameworks and advocacy networks that address the structural dimensions of inequality in Cabo Verde (Rainho, 2021b). By remaining grounded in local realities while articulating connections to global conversations, *Neve Insular* exemplifies a model of resistance built on care, collaboration, and creative reimagining.

Conclusion and future perspectives

Neve Insular exemplifies how interdisciplinary and community-centred approaches to art, ecology, and education can respond meaningfully to contemporary socio-environmental challenges. By reclaiming Cabo Verde's textile traditions and integrating them into agroecological practice and creative collaboration, the project transforms historical memory into a source of renewal. Its model—rooted in care, reciprocity, and co-creation—challenges extractivist paradigms while cultivating sustainable futures.

The project's achievements, from the empowerment of rural women in the *Mulheres do Vale II* programme to the presentation of its work at international platforms like *XTANT Roots 2024*, demonstrate the impact of grounded, locally rooted action. Works such as *Banda NI – Janelão em ráfia* testify to the project's capacity to blend tradition with innovation, generating artifacts that operate as living archives—resonant both aesthetically and culturally.

However, as the project evolves, it must navigate ongoing tensions and opportunities. Key among these are the challenges of scalability, sustainability, and the ethical negotiation of cultural representation. Expanding agroecological models beyond the Madeiral region requires significant investment in training, infrastructure, and ecological assessment. Long-term viability will also depend on diversified and autonomous funding structures, such as cooperatives or social entrepreneurship models, reducing reliance on temporary grants and ensuring continuity of mission.

Maintaining the integrity of collaborations with local communities—particularly artisans and farmers—is equally vital. Balancing cultural fidelity with contemporary expression demands sustained dialogue and ethical co-authorship. International visibility, while valuable, should continue to reinforce rather than divert energy from grassroots efforts.

Looking ahead, *Neve Insular* has the potential to deepen its influence through stronger engagement with policy frameworks, the expansion of its educational programmes, and strategic partnerships with like-minded initiatives across other postcolonial and island contexts. Its capacity to operate simultaneously at the level of material practice and conceptual provocation makes it a compelling model for interdisciplinary, decolonial, and sustainable development.

By continually adapting to new conditions while remaining anchored in its founding values, *Neve Insular* offers a living example of how creative assemblies can activate care, resistance, and transformation. As it forges new connections between land, culture, and collective agency, the project not only enriches Cabo Verde's cultural landscape but also contributes to broader efforts to reimagine sustainability in the face of global uncertainty.

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REFERENCES

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia* (B. Massumi, Trans.). University of Minnesota Press.

Herzfeld, M. (2004). *The body impolitic: Artisans and artifice in the global hierarchy of value*. University of Chicago Press.

Mbembe, A. (2002). The power of the archive and its limits. In C. Hamilton, V. Harris, J. Taylor, M. Pickover, G. Reid, & R. Saleh (Eds.), *Refiguring the archive* (pp. 19–26). Springer.

Nolasco, A. (2004). Art and design practices for holistic sustainability: The Insular Snow Project. *The International Journal of Design in Society, 18*(2), 1–18. https://doi.org/10.18848/2325-1328/CGP/v18i02/1-18

Rainho, R. (2021a). A insurgência de uma plantação de algodoeiro hoje: Dos tempos de magia escrava à resistência cultural pós-independência em Cabo Verde. In E. Colares & J. C. Paiva (Eds.), *Experiências em educação artística e decolonialidade* (pp. 78–94). Instituto de Investigação em Arte, Design e Sociedade.

Rainho, R. (2021b). Luta dos saberes negr@s na educação artística: Memória do algodão entre Brasil e Cabo Verde. In S. Peterson & A. Midori (Eds.), *O ensino artístico que temos e o que queremos: Posturas, histórias e experiências no Brasil e em Portugal* (pp. 50–59). Instituto de Investigação em Arte, Design e Sociedade.

Rainho, R. (2022). Cultivar algodão, despir a violência e o esquecimento. In C. Paoliello & C. Albino (Eds.), *Design e artesanato: 22 verbos para 24 autores*. Universidade de Aveiro.

Sennett, R. (2012). *Together: The rituals, pleasures and politics of cooperation*. Yale University Press.

Shiva, V. (2008). *Los monocultivos de la mente: Perspectivas sobre la biodiversidad y la biotecnologia*. Fineo.

Thorpe, A. (2008). Design as activism: A conceptual tool. In *Changing the Change: Design Visions, Proposals: An International Conference on the Role and Potential of Design Research in the Transition Towards Sustainability* (Torino). http://www.allemandi.com/university/ctc.pdf

Mycelial score

Decomposing artistic research methods of repetition

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ABSTRACT

In the face of challenges such as the climate crisis, artistic research is increasingly tasked with exploring approaches that question anthropocentric perspectives, enabling ethical and responsive practices with the more-than-human world.This text introduces the Mycelial Score, a research method and tool developed within a de/compos(t)ing methodology that accompanies an artistic research project. Inspired by mycelial processes, this evolving artistic research methodology embraces decomposition, recomposition, and composting as central principles. The Mycelial Score functions within this framework as a research method and tool that sets the methodology in motion while enabling reflection about and with it. It is a nonlinear, cyclical system for structuring, recombining and fostering interdependencies between theoretical-methodological references, artistic practices, and art works. Through processes of revisitation and transformation, it brings about continuous possibilities for engagement by organising materials into a dynamic, generative and interdependent meshwork (Ingold, 2007). This text explores its emergence and evolution into a tool for live performance and co-creation. It examines how the Score functions within a conceptual framework of tentacularity (Haraway, 2016), assemblage (Deleuze & Guattari, 2004; Tsing, 2015), and decomposition, engaging with these ideas as matters to think-with artistic research. By considering the Mycelial Score as a dynamic system, this text offers insights into the ways artistic research can operate as a process of continual entanglement, fostering sustainable, collaborative methodologies in response to the pressing ecological and social challenges of our time.

KEYWORDS

Artistic research, research method, assemblage, decomposition, mycelial score

Tracing the mycelial score

Drawing inspiration from mycelium, the intricate networks of fungi that sustain ecosystems through decay and symbiosis, I've been developing a de/compos(t)ing methodology rooted in decomposition and the generative potential of repetition through continuous revisitation, transformation and enmeshment of research materials. This cyclical, recursive, and materially engaged approach, grounded in practice-led inquiry and ecological thinking, values repetition, reconfiguration, and emergent knowledge over fixed outcomes. In this sense, the methodology resists linear progress and resonates with Ingold's notion of meshwork (2011), where understanding emerges through ongoing engagement and the continuous weaving together of different strands, rather than a step-by-step progression. Knowledge, thus, is not produced but composted.

Within this framework I developed the Mycelial Score (from mycelium, of the kingdom of fungi), an artistic research method and tool that organises and activates the materials of my research practice. The Score facilitates a system of cyclical engagement, enabling relationships to emerge between conceptual references, artistic creations, and experiential practices. It is through this meshwork that the methodology becomes materially and performatively enacted.

This text explores how mycelial processes offer not only a biological model but also a conceptual and methodological framework for artistic research. By examining mycelium's capacity to form adaptive meshworks, recycle matter, and sustain multispecies ecologies, the de/compos(t)ing methodology is then situated within a broader landscape of ecological and artistic inquiry. One that draws from theories of assemblages (Deleuze & Guattari, 2004; Tsing, 2015), tentacular thinking and more-than-human entanglements (Haraway, 2016), and the significant role of fungi as highlighted by Tsing (2015) and Ostendorf-Rodríguez (2023) in rethinking interdependence across artistic and social practices.

Through an exploration of the Mycelial Score's emergence, structure, and applications in performances, the text also traces how the tool supports a form of artistic research that embraces unpredictability and facilitates processes of continuous becoming, operating as a living system of knowledge composting.

Mycelium and more-than-human entanglements

Mycelium, the vegetative structure of some fungi, forms a decentralised, ever-expanding network of hyphae, microscopic thread-like structures that grow underground or within substrates (Sheldrake, 2021). These networks facilitate nutrient exchange, decomposition, and symbiotic relationships with plants and other organisms. Unlike plant roots, mycelial networks do not grow

in a predetermined direction but respond dynamically to environmental conditions, adapting to obstacles and redistributing resources as needed. One of their most critical ecological roles is decomposition, breaking down complex materials into simpler compounds that can be recycled into the ecosystems (Sheldrake, 2021; Stamets, 2005).

Beyond their role as decomposers, fungi also engage in mutualistic symbioses, the most well-known being mycorrhizal networks, which link fungal hyphae with plant roots. Found in nearly 90% of plant species, these relationships allow for nutrient exchange, where plants supply fungi with sugars produced via photosynthesis while fungi with "mycorrhizal hyphae (that) are fifty times finer than the finest roots and can exceed the length of a plant's roots by as much as a hundred times" (Sheldrake, 2021, p. 141) are able to provide plants with water and nutrients that would otherwise be out of reach. This underground web, the "Wood Wide Web", enables communication and cooperation between different species, allowing forests to function as interconnected communities rather than isolated individuals (Simard et al., 1997).

Tsing's (2015) exploration of assemblages further highlights how diverse human and non-human actors - matsutake mushrooms, trees, foragers, traders, and capitalist markets - form shifting, interdependent networks rather than stable systems. While biological symbiosis, such as the mycorrhizal relationship between matsutake and trees, is central to these assemblages, Tsing expands the concept beyond biology to include economic and social entanglements. From the various uses of the term by different authors, Tsing joins the Deleuzian configuration of assemblage, which resists fixed structures in favor of dynamic, ever-evolving relations. Unlike symbiosis, which implies direct biological interaction, assemblages capture the fluid, unpredictable coexistence of multiple forces, including histories of capitalism and environmental ruin. By framing survival through assemblages rather than isolated systems, Tsing challenges the notion of self-sufficiency, showing how life emerges in damaged landscapes through precarious yet creative entanglements.

Thinking with mycelium means entangled thinking. As Tsing notes, "we are contaminated by our encounters" (2015, p. 27). Mycelial meshworks, much like Tsing's notion of the assemblage, thrive in disturbance, constantly adapting and reshaping themselves through interaction, akin to Ingold's (2007) concept of the meshwork. Building on this understanding of interconnectedness not as "a network of connected points, but a meshwork of interwoven lines" (Ingold, 2011, p. 63, emphasis added), Haraway's (2016) notion of tentacular thinking highlights the need for multi-perspectival ways of knowing and becoming-with in multispecies entanglements in a world of ecological uncertainty.

Meanwhile, Yasmine Ostendorf-Rodríguez (2023) emphasises the potential of fungi as a cultural and artistic model, pointing out the ways

Indigenous knowledge systems, artists, and ecologists are turning to mycelial processes for inspiration in rethinking sustainability, resilience, and interdependence. The distributed intelligence and cooperative strategies of mycelium offer an alternative perspective to dominant Western notions of individuality and control, encouraging an ethic of entanglement and reciprocity (Tsing, 2015; Ostendorf-Rodríguez, 2023). By bringing fungal metaphors into artistic discourse, framing fungi as models for sustainable futures, Ostendorf-Rodríguez links fungal resilience and regenerative cycles to alternative models of societal and ecological transformation. These groundings directly infiltrate the development of the Mycelial Score.

Revisiting the mycelial score

For a few years now I've been working on an artistic research project that continuously and purposefully remains an open-ended process. This project unfolds in several cycles, creating diverse practices, various art works and other artistic materialisations that include and give rise to numerous research materials. An integral part of this project's methodology is researching through repetition, constantly revisiting materials and recycling them. A methodology of composting, of a continuous rhizomatic process (Deleuze & Guattari, 2004) that decomposes things and from which others emerge, recomposed. A de/compos(t)ing.

Fundamental to this methodology was the creation of what I call the Mycelial Score, a dynamic system that operates nonlinearly, enabling the continuous recombination of research materials. It is composed of three material categories, References, Matters, and Tasks, coded by colours, letters, and numbers that track and prompt ever-shifting recompositions. In addition to structuring and organising all the research materials, this tool and method enables the observation of dynamic relationships, supporting the de/compos(t)ing methodology by making visible the constant composting process of decomposition and recomposition.

While the broader research project unfolds through numbered cycles - 1.0, 1.5, 3.0, and so on - the Mycelial Score does not. It's cyclical in nature, but not cycle-based. More than a static document, it functions as an assemblage, where meaning and function are not fixed (Deleuze & Guattari, 2004). Like mycelium, the Score forms an evolving meshwork of entanglements, shaped by interactions with myself, others, and the spaces it inhabits. Each engagement adds layers and reshapes its content, keeping it in a state of becoming. This adaptability reflects not only a conceptual engagement with ecological and more-than-human approaches, but also a methodological orientation that came about through practice. As I engaged with repetition and revisitation, I sought

to stimulate co-incidences between bibliographical references and the practical, embodied experiments I was conducting. Thus, I began developing the Mycelial Score as a research tool that would allow me to structure and observe the relationships between diverse materials, while also reflecting on their generative and interdependent nature.

The categories of the Mycelial Score are: References (sources), Matters (created works, feedback), and Tasks (scores and task-oriented actions, self-authored or from others). Physically, these categories are laid out on surfaces with movable post-its, enabling tactile interaction and the observation of patterns. In this example (Figure 1) the top sheet contains the References, the bottom the Matters, and the left sheet the Tasks.

While the Score does not operate from an "A to B" sequence, attending to it involves a shifting interplay of five movements which I currently identify as:

Scoring: Organising existing materials (References, Matters, Tasks), placing and coding them and their coincidences across the Score onto physical space (often with post-its on large paper sheets, as in Figure 2.) and digital space (using a personal knowledge management software).

Tasking: Selecting or generating a Task to revisit, engage, or respond to a material, create new ones, or observe patterns.

Embodying: Doing a Task through movement, writing, site-specific intervention, performance, somatic practice, audio recording of oral reflection, etc.

Entangling: Recomposition by re-integrating what emerges back into the Score - as a different Matter or Task, or as a revision to a previous element - and re-scoring the co-incidences, between materials.

Repeating: Repeating the process, altered each time by what emerges and has been composted before.

Although this can give the illusion of linearity, that is not the actual case. There's no fixed sequence of steps or linear stages but recursive movements. These have no clear beginnings or ends, but overlapping, porous constellations of repetition and decomposition, where nothing fully disappears, and nothing returns unchanged. The simple act of organising existing materials often leads to recomposition, to entangling and creating alternative connections. Moreover, a Task can, for example, indicate an explicit way of revisiting a previous practice, which in turn gives rise to another creation, or the need to call up another bibliographic reference or create another task to guide the practice, and so on and so forth in (possibly) endless movements.

Materialisation and collaboration

The mycelial score as composting

The Mycelial Score is used within the broader artistic research project, which is the structure that moves through named cycles (e.g., Cycle 1.0, 1.5, 3.0). The numbers are for my own temporal-spatial orientation, not as a rigid chronology. These cycles mark somewhat distinct sites of practice, and within them, the Score may be activated and take on new configurations. Presence in a specific location determines which Tasks are to be carried out, which materials revisited, and how these are assembled into a form of presentation. The Score does not predefine structure, rather, it co-emerges with its context.

For example, during Cycle 1.5 of the research project, the Score was adapted into an immersive performance-installation, inviting visitors to navigate and manipulate the materials directly, and in research cycle 3.0, the Score became a platform for distributed agency, activated solely by the participants rather than by myself as performer. This decentralisation of authorship aligns with the mycelial model and further enacts the principles of the de/compos(t)ing methodology.

The performance-installation of cycle 1.5 that invited audience immersion in a room-spanning adaptation of the Score (Figure 3) stemmed from an interest in exposing the generative process inherent in the interplay of the materials, and really physically immerse the audience in it (Figures 4 and 5). It was conceived as an exercise in materialisation, not as the imposition of a fixed form, but as an exploration of materiality in a specific place. Less an adaptation of something pre-existing, and more a creation with the place. The physicality of the document only manifests in this site-responsive dialogue, of listening and responding, that determines which Tasks to propose, create, or change; which References to conjure; and which Matters to include, develop, or compose, and how all these elements relate to each other, the place, myself, and the audience.

Cycle 1.5 introduced Task Proposals throughout the space, allowing audience members to choose how, where, or if they would engage. It also included a guided ecosomatic practice (Figure 6), grounding concepts from the displayed materials in their own sensory experiences. However, the emphasis was largely on the Matters, like live-manipulated videos, suspended translucent photographs, and so on (Figure 7). Cycle 3.0 more deeply explored the experiential dimension of Tasks and the Score's co-creative potential, being specifically designed to explore diverse interactions between multiple participants and the Mycelial Score (Figure 8), thus marking a significant shift from its primarily individual application. As participants moved freely, they encountered various Task proposals, including somatic practices, questions, activities fostering

Figure 1 – Mycelial Score at author's home office (Author, 2020).

Figure 2 – Placing and coding information about Matters on a physical sheet of paper (Author, 2024, photo by Stephan Jürgens)

Figure 3 – Cycle 1.5 immersive performance-installation (Author, 2024, photo by Stephan Jürgens).

Figure 4 – Physical immersion in Matters, Cycle 1.5 (Author, 2024, photo by Stephan Jürgens).

interaction, and prompts for exploring co-incidences between materials. Unlike previous cycles where I actively performed, manipulating videos (Figure 7), giving oral instructions (Figure 6), here I relinquished this role and the Matters present required direct participant activation. This reinforced the understanding of the Mycelial Score as something that materializes in experience and not in its static materiality, a tactile and immersive involvement where things join in movement (Ingold, 2011). Through the Tasks, participants were invited to contribute, layering new connections and reorganising existing elements, transforming the Score into a collaborative space of rhizomatic dialogue that could extend beyond its immediate context since the Tasks may be enacted within the space or carried elsewhere.

This cycle offered the first glimpse of the Mycelial Score's potential as an open platform for co-creation, bringing the research closer to a mycelial model of distributed agency where contributions circulate, transform and propagate within and outside of the system (Figure 10).

This process of materialisation, where the Mycelial Score unfolds through relational entanglements rather than imposing a fixed structure, echoes Ingold's notion of concrescence (2018). The performance-installations of cycles 1.5 and 3.0 are not assembled from static elements but grow

through a responsive, co-constitutive dialogue with the place, materials, and audience. This unfolding also embodies the dynamics of Deleuze & Guattari's assemblage (2004), where heterogeneous elements form shifting configurations through deterritorialization and reterritorialization. The Mycelial Score, therefore, remains in flux, a site where processes are continually composed, decomposed and recomposed. Its form emerges not as a predetermined structure but as an event of ongoing becoming, a composting.

This approach to creative engagement and collaboration prioritises interdependence, resonance, and reciprocity. Collectively, the Mycelial Score becomes a porous framework where participants freely navigate, respond, interact and reconfigure the Score. In this open structure, each gesture modifies the system; participants are not viewers or instructed performers, but co-creators entangled (Figures 11 and 12). In Cycle 3.0, this intensified with my withdrawal as performer, and participant presence became the "composting agent," activating connections, shifting emphases, and re-mapping the Score.

Creative engagement here values recursiveness and attunement over novelty. Repetition, revisitation, and recomposition are fertile, not redundant. The Score thus enacts a sustainable practice, not through efficiency, but through its inherent capacity for renewal and cyclical return. Artistic research becomes a living system of transformation rather than a linear pipeline of outputs.

Departing from creativity theories that often emphasise innovation, productivity, or confidence-building (e.g., Csikszentmihalyi, 2015; Kelley & Kelley, 2013), this research views creativity as a redistribution of the known, a thinking-with and composing-with that resonates with Haraway's tentacular thinking and Ingold's notion of re-searching. It arises not from isolated insight but from relational entanglement, aligning with Lury and Wakeford's (2012) concept of research that actively participates in the social's becoming, generating conditions for emergent configurations, relations, and ways of knowing.

In this way, the Score also gestures toward social impact, not in the form of quantifiable metrics but through its invitation to co-presence, shared attentiveness, and ecological modes of thinking, embodying the qualities of compost: open, generative, and sustained through collective care.

Decomposition

Composting as an entangled praxis

The de/compos(t)ing methodology finds a potent articulation in decomposition, not merely as a metaphor, but as a structural,

Figure 5 – Physical immersion in Matters, Cycle 1.5 (Author, 2024, photo by Stephan Jürgens).

Figure 6 – Guiding audience in ecosomatic practice, Cycle 1.5 (Author, 2024, photo by Stephan Jürgens).
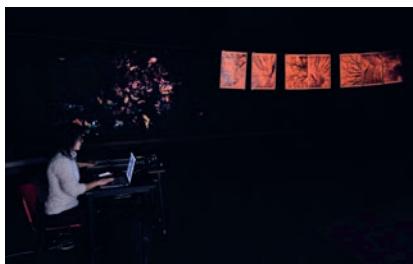
Figure 7 – Live video-manipulation of videos and operating the light table, Cycle 1.5 (Author, 2024, photo by Stephan Jürgens).

Figure 8 – Participant and Task for activation beyond the installation space (Author & participants, 2024).

epistemological, and ethical approach. Like fungi breaking down matter, the methodology invites the breakdown of artistic, conceptual, and material boundaries, fostering contamination and recomposition. Decomposition is not erasure but transformation through entanglement – the fertile ground for the Mycelial Score's ecology of layered materials and shifting agency.

Mycologist Merlin Sheldrake's childhood experience with a layered soil experiment vividly illustrates this process. The initial distinct layers and boundaries, through the unseen work of worms, bacteria, and fungi, dissolved, nothing stayed in place. Just as composers create music by arranging sound, Sheldrake comments, decomposers unravel life, turning what once existed into the foundation for something else. In decay, continuity is ensured. "Composers make; decomposers unmake. And unless decomposers unmake, there isn't anything that the composers can make with." (Sheldrake, 2021, p. 250)

This highlights recomposition as emerging from interdependence, distributed agency, and reciprocity, not a singular force but entangled interactions. Composting becomes a site of human and more-than-human intermingling, aligning with Haraway's tentacularity, of "life lived along lines," (2016, p. 32) and Tsing's precarious assemblages. In

Tsing's own words, "Precarity is the condition of being vulnerable to others. Unpredictable encounters transform us; we are not in control, even of ourselves." (2015, p. 20). This framework is particularly relevant to understanding audience participation in the Mycelial Score as co-creation, emphasizing the "hot compost piles" of "oddkin" where we "become-with each other or not at all" (Haraway, 2016, p. 4).

Furthermore, these entanglements highlight how repetition sustains ongoingness without replicating sameness. Decomposition does not create the identical, repetition is not a return to the same thing. To decompose is to compose differentiation, each iteration carrying with it variations, displacements that prevent anything from remaining identical (Deleuze, 1994). Agamben expands this, defining repetition as a revival, a means of making something possible again, not as a fixed event but as something open (1995). Decomposition, therefore, is not breakdown into absence but the persistence of matter in distinct compositions. To decompose is to repeat differently, to allow for return to happen, but never in the same form. Rather than reinforcing what is already known, repetition unsettles, redistributes, and opens up paths that were not previously outlined.

The Mycelial Score's operates here, where materials are emergent forms of recomposed difference, echoing Ingold's "re-searching" (2018). This is not a search for the entirely new, but a process of revisiting that allows layers to be revealed through renewed attention. Ingold argues that knowledge arises not from linear accumulation of information but from continuous re-encounter. In effect, according to Ingold, rediscovering the same or revisiting the identical is no more possible "than it is, in Heraclitus' famous analogy, to enter the running waters of the same river twice. In short, nothing is ever new, because nothing is ever repeated" (2018).

Just as decomposition transforms rather than erases, re-engaging with previous reflections and materials becomes an ongoing entanglement. Over time, Matters have evolved from static objects to living components, their meaning shifting through revisitation and re-contextualization. This gave rise to another Task "Revisiting Reflections," a process of diluting past texts within current writing. This process of dilution mirrors the compost heap, rich in nutrients, in threads of hyphae and multiespecies collaborations, each layer contributing so that, with the passage of time, through imperceptible movement and the right combination of moisture, light and darkness, it becomes compost, turning dirt into soil. Nothing "new" is really being created, questions and concerns sown "in those" texts, find other words "in these" ones. Sometimes I feel that I am now giving flesh to ideas that were impalpable, making sense(s) or creating knots between loose ends, re-searching again (Ingold, 2018).

Even this current text incorporates fragments of previous writings, destined to become part of the Mycelial Score's Matters, available for future revisitation by myself and others.

Figure 9 – Participants engaging with Mycelial Score in cycle 3.0 (Author & participants, 2024).

Figure 10 – Participant as composting agent in cycle 3.0 (Author & participants, 2024).

Figure 11 – Participant doing a Task in cycle 3.0 (Author & participants, 2024).
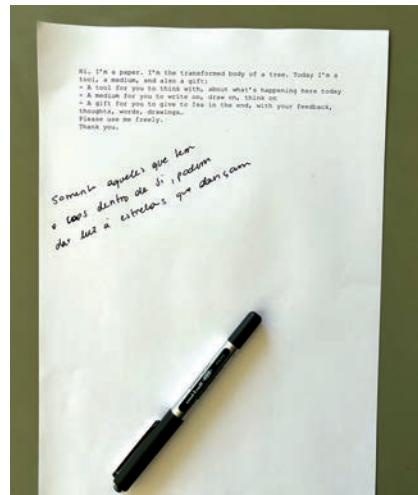
Figure 12 – "Only those who have chaos within them can give light to dancing stars" written by participant in cycle 3.0 (Author & participants, 2024).

Open-ended endings

Working in cycles makes visible the empirical reality that creation is a spiral process, where certain aspects come to the surface from time to time only to submerge and disappear again, but remain pulsating, in potency, waiting to be summoned again. Continually writing and rewriting about these processes brings new considerations, or rather, renewed understandings. Only now, during the composition of this text, did I realise that by working with the Mycelial Score I'm trying to embrace artistic research as a space of ongoingness, a potential for co-creative, non-hierarchical knowledge-making in response to ecological crisis.

REFERENCES

Agamben, G. (1995). Difference and repetition: On Guy Debord's films. In T. McDonough (Ed.), *Guy Debord and the Situationist International: Texts and documents*. The MIT Press.

Csikszentmihalyi, M., Pratt, S. (2015). *Creativity: The psychology of discovery and invention*. Gildan Media LCC

Deleuze, G. (1994). *Difference and repetition*. Columbia Univ. Press.

Deleuze, G, & Guattari, F (2004). *A thousand plateaus*. Continuum.

Haraway. D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke Press.

Ingold, T. (2007). *Lines: A brief history*. Routledge.

Ingold, T. (2011). *Being alive: Essays on movement, knowledge and description*. Routledge.

Ingold, T. (2018). *Search and search again: On the meaning of research in art*. [Podcast]. Retrieved January 14, 2025, from https://soundcloud.com/cca-glasgow/tim-ingold-search-and-search-again-on-the-meaning-of-research-in-art

Kelley, T., Kelley, D. (2013). *Creative confidence: Unleashing the creative potential within us all*. Random House Audio

Ostendorf-Rodríguez, Y. (2023). *Let's become fungal! mycelium teachings and the arts: Based on conversations with indigenous wisdom keepers, artists, curators, feminists, and mycologists*. Valiz.

Lury, C., & Wakeford, N. (Eds.). (2012). *Inventive methods: The happening of the social*. Routledge.

Sheldrake, M. (2021). *Entangled life: How fungi make our worlds, change our minds & shape ourfFutures*. Random House.

Simard, S. W., Perry, D. A., Jones, M. D., Myrold, D. D., Durall, D. M., & Molina, R. (1997). Net transfer of carbon between ectomycorrhizal tree species in the field. *Nature, 388*(6642), 579-582.

Stamets, P. (2005). *Mycelium Running: How Mushrooms Can Help Save the World*. Ten Speed Press.

Tsing, A. L. (2015). *The mushroom at the end of the world: On the possibility of life in capitalist ruins*. Princeton University press.

Strange strangers at play
Crafting transitional design assemblages for more-than-human future-making

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ABSTRACT

It is considered how the design artefacts of a research-through design project, with the aim of exploring speculative design in a community biodiversity activism context, can be framed as creative assemblages that mediate key transitions and transformations; in particular, with a focus on a Speculative Design Playset as a key assemblage that mediates between theoretical framings, community biodiversity activism, and emerging design theory. It is analysed in terms of transformative creative assemblages to explore how speculative design might be framed as a More-Than-Human practice for more diverse futures.

KEYWORDS

Speculative design, research through design, post qualitative inquiry, biodiversity

Introduction

The project was a response to a lure towards transcending monoculture, by engaging with two provocations of crises of diversity, within and outwith design practice. Within, a crisis of representation within speculative design, an approach to design that has aspirations to question assumptions about the future and reframe away from a normative expected future (Dunne & Raby, 2014), but which is often criticised for lacking much impact outside of the academy and the gallery (Jakobsone, 2017). Further, it has been criticised for falling short of its aspirations due to a paucity of representation from minority and marginalised voices (Prado de O. Martins, 2014), resulting in design outcomes that lack the diversity that might be expected for such an avowedly transformative discipline (Tonkinwise, 2014); outside, a crisis of biodiversity, with an extensive loss of habitats and species worldwide which are destroying the web of life, making it less resilient and resulting in a monoculture that can't sustain life in the long term (UN, 2019). In short, a lack of sociodiversity within design and a lack of biodiversity within the environment. The question was how the entanglement of these crises might be a fruitful setting for design research, by exploring them through the conceptual character of the Strange Stranger.

Methodological framing

Design research

This is a work of Practice Based Research, whereby creative practice constitutes a research process (Candy, 2006), specifically Research Through Design (RTD), where processes and artefacts of design projects are framed as theoretical contributions to knowledge (Frayling, 1993). RTD has a particular onto-epistemological stance: generative and cumulative—it doesn't converge on singular preexisting truths but instead generates cumulative new realities; situated—its contributions to knowledge are intimately connected to the contexts in which they are formed; and underspecified by theory--generalised or abstracted theories cannot account well for cumulative and contextual knowledge. In such a context, Transitional Theory (Redström, 2017) posits that if academic research is the making of theory, and what RTD makes is design, design artefacts thus represent theoretical definitions in design by example. Further, it argues that definitions in design theory cannot be fixed and prescriptive, describing what is, but transitional and emergent, describing what emerges. Such definitions are intermediaries between a specific artefact in a particular context, and a theoretical example or prototype the types of things that could emerge through design; not a prescriptive and abstract theory, but a contextualised description of design that might guide design acts in other contexts.

Post Qualitative Inquiry

The research project follows a methodological paradigm of Post Qualitative Inquiry (PQI), as distinct from traditional qualitative research. PQI is positioned as an approach to research methods in response to the onto-epistemological stances of "post" philosophies, particularly post-structuralism and post-humanism. Such stances are constitutively critical of pre-existing structures and hierarchies, of human-centrism, and the detached and objective researcher. It is impossible to conduct research that has a positivist, formalised methodological structure from a stance that rejects such a formulation; the likely outcome is to become trapped in a "groove" defined by the worldviews that the research attempts to step beyond. (Adams St.Pierre, 2014) This aligns with an approach to design research which aims to not be defined by design's past but propose it's future, and with a research project that aims to challenge normative, monocultural systems: as Deleuze states, "the new is an outside that exists in the world, and as such it must be constructed" (Deleuze, quoted in Adams St.Pierre, 2014).

In PQI, methodology is not prescribed and formalised in advance, but is descriptive of what was done. The trajectory of inquiry should not be methods led, but led by theory and concepts. What this entails is practice is to start by reading deeply and thinking with theory, then taking informed action, allowing the process and the methodology to open up as the inquiry progresses. This allows a researcher "to produce thought unthinkable within the bounds of traditional method" (Mazzei, 2020).

Conceptual framing

As a form of PQI, this research was led by some key conceptual ideas. In post-structuralist thought, philosophy as an activity is framed as a creation of new concepts, almost as an act of design. They define a plane of immanence, an empty space that is framed and structured by what currently exists, and into which a philosopher must bring new concepts to bear. Design thus can be framed as a form of materialised philosophy.

An important aspect of this is the concept of an assemblage, a way to understand that things are constituted by the bringing together of materials and meanings to create something new. Thinking with assemblages allows the consideration of how agency may be distributed between heterogenous, human and non-human actors (Latour, 2007). Design can be framed as an act of assemblage, bringing together disparate objects in the creation of new things. Assemblages can be disturbed by design acts, forced into unstable transitional states which then resolve into a new assemblage (Wilkie, 2010). Framing the products of design as creative assemblages can be useful in probing the mediatory role that design objects can have in facilitating transformation and change.

Two conceptual framing discourses were used to lead this research: Queer and More-Than-Human, one representing high sociodiversity and the other, high biodiversity. Queer, a way of framing outsiders from the heterosexual mainstream of sexuality and gender, as well as a description of weirdness, is a strategy for challenging normative structures and systems: "a resistance to the regimes of the normal" (Warner, 1993). It is an understanding that comes from a marginal perspective of the possibility of different futures, their essential ephemerality, and the value of making them together in the present (Muñoz, 2009). More-Than-Human is a framing of the world that doesn't centre the human but doesn't reject it either, seeing it as one with other types of being: where naturecultures meet technosciences (Bellacasa, 2017). In a more-than-human world, the Anthropocene, is minimised in favour of a Pluriverse, of multiple overlapping worlds, of multiple perspectives. There is an essential tentativeness and ephemerality about both lenses, forming hopeful heterotopic bubbles of possible futures on the edges of the human mainstream.

Conceptual characters are a philosophical tool to guide the creation of concepts, where the philosopher takes on a persona through which they can frame the emergence of new ideas. (Deleuze & Guattari, 1994). Conceptual characters have been used to guide design projects, generally taking the form of human archetypes, such as the idiot (Wilkie et al., 2015). Reframing conceptual characters as less anthropocentric conceptual figures can be a way to "engage in speculation about how we wish to engage with the more than human" (Tironi & Díaz Bejarano, 2024). This project uses the Strange Stranger as it's More-Than-Human guide; proposed by Timothy Morton as a representative of their philosophy of Queer Ecology: "Strange Strangers are uncanny, familiar and strange simultaneously. Their familiarity is strange, their strangeness familiar... yet their uniqueness is not such that they are independent... every lifeform is familiar, since we are related to it" (Morton, 2010).

Speculative research

This project is also framed within a paradigm of speculative research practices, encompassing speculative fiction and fabulation, speculative design, and speculative games (design). Speculation as a research practice is a way of engaging with futures beyond what has been termed the 'Impasse of the Present'; the sense that even with rapid technological, environmental and social changes, and multiple ongoing entangled crises, the future always remains an extension of the present, particularly in terms of hierarchies and power relations (Savransky et al., 2017). Speculation is to treat futures as prototypes and provocations for actively resisting such a present. As an approach to storytelling, speculative fiction or fabulation (Søndergaard et al., 2023) is a way of imagining new and richly detailed worlds, that exist within their

own fictional reality, and that can exert effects on the real world, as provocations, ideas, and rhetoric.

Speculative Design is a practice that goes beyond fabulation, in that it can materialise fabulated elseworlds, through making artefacts that act as lures towards unexpected futures (Dunne & Raby, 2014). Such artefacts can be considered as 'diegetic', which is to say that they exist witin a fictional reality, while also being present in the real world (Sterling, 2011). In this way, they provide a material bridge between the real and the imagined worlds. They offer something to hold and play with, allowing you "not to imagine the future, but to feel your way into that unknown dimension" (Tonkinwise, 2014, p. 186). For this reason, in particular, this research has worked with game design as a form of design speculation, as the interactivity of games allows for much more meaningful interactions with complex and speculative ideas than simply viewing a speculative artefact (Coulton et al., 2016).

Methods

Post qualitative Inquiry is not oppositional to methods as such, but to the instrumentalisation of qualitative inquiry, approached with an objectivised stance, whereby the inquirer stands apart from the context of research, makes measurements and records them as data. Such an approach borrows from the positivist natural sciences, and attempts to glean generalisable truths from qualitative inquiry. PQI aims for a more emergent approach, situated in a particular context, where the inquirer, the field of research and concepts are entangled, co-implicated, and mutually co-creative (Adams St.Pierre, 2014; Guttorm et al., 2015; Mazzei, 2020). Similarly, it is argued that "practice-based design research cannot draw upon a received and sanctioned set of research 'methods'" (Blythe & Stamm, 2017, pp. 60–61).

Methodologically, this project eschews a formally planned out series of methods—structured interviews, questionnaires, and data collection tools—over an improvisational approach, that allows one to "encounter the way concepts produce thought" (Mazzei, 2020). This can be framed as Intentional Tactics towards particular outcomes (ie to make speculative design accessible for community biodiversity activism), and Operational Techniques, the actual ways of doing design to achieve those aims. (Blythe & Stamm, 2017, pp. 60–61). These are illustrated in Figure 1.

Research project structure

The empirical design research of this project separates into two distinct phases, with particular intentions and outcomes: Celium, and Playset.

INTENTIONAL TACTICS
TO ACHIEVE A GOAL

RESEARCH CREATION
THINKING THROUGH PRIOR THEORY AND CREATIVE OUTPUTS

PROTOTYPING
DEVELOPING NEW CONCEPTS THROUGH DESIGN ACTS

REFLECTIVE PRACTICE
MAKE INSIGHTS THROUGH REFLECTION ON CREATIVE PRACTICE

EMBRACE UNCERTAINTY
STAYING WITH THE TROUBLE AND LETTING THE RESEARCH UNFOLD

ROLE IN THIS PROJECT

EARLY ORIENTATION RESEARCH / DEVELOPING / THE FRAMEWORK / REFLECTING ON PLAYSET DESIGN	EARLY DESIGN EXPERIMENTS TO EXPLORE CONCEPTS / DESIGNING THE FRAMEWORK AND PLAYSET	USED THROUGHOUT	USED THROUGHOUT

OPERATIONAL TECHNIQUES
TO MAKE IT HAPPEN

CONVERSATIONS & ENCOUNTERS
TALKS, WALKS AND INTERACTIONS TO LEARN ABOUT LIVES AND CONTEXTS

DESIGN EXPERIMENTS
THE EXPERIMENTAL DOINGS OF DESIGN

DESIGN WORKSHOPS
COLLABORATIVE EVENTS OF CREATIVE PROBLEM SOLVING

ANNOTATED PORTFOLIOS
ACCOUNTING FOR DESIGN BY REFLECTING ON AND ANNOTATING A PORTFOLIO
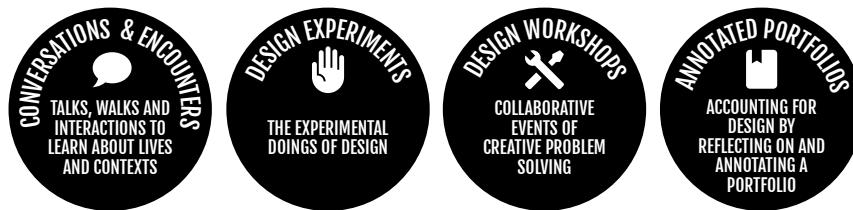
ROLE IN THIS PROJECT

EARLY ORIENTATION RESEARCH / DEVELOPING / THE FRAMEWORK	EARLY EXPERIMENTS / DESIGNING THE PLAYSET	EARLY CONTEXT EXPLORATIONS / DESIGNING AND TESTING PLAYSET	REFLECTING ON PLAYSET DESIGN

Figure 1 – Design Tactics and Techniques drawn on in this project.

DESIGN CELIUM

LENSES

QUEER

RESISTANCE TO THE REGIMES OF THE NORMAL

Non-essentialist

Reject arbitrary binaries and categorisations between beings

MORE THAN HUMAN

WHERE TECHNOSCIENCES MEET NATURECULTURES

Commitment to better futures

STRATEGIC GOALS

CARE

CARING ABOUT and TAKING CARE OF beings and ecosystems

COLLECTIVE ACTION

LABOUR to PROTECT and PROMOTE the diversity of ecosystems

SEIZING FUTURES

Staking a claim on BETTER FUTURES for all beings and ecosystems

ONTOLOGY (WORLDVIEW)

MATTER

Matter is in flux, with no distinct boundaries between beings, and is intertwined with meaning.

ENCOUNTERS

Beings emerge through intra-active encounters, and are defined by relationships, with other beings.

TIME

Temporality is measured by subjective events. Presents are thick, simultaneous with multiple pasts and futures.

PLACE

Location as the meaningful being that emerges through encounters with a space.

NARRATIVE

An account of material and meaningful encounters of beings in a place through time.

SPECULATIVE FUTURING STRATEGIES

Making

Practices of design and making can invoke possible futures and more than human encounters in material ways.

Playing

Encounters are playful and performative acts in which futures can be experimented with.

Time Travel

Speculating about travelling to other times can reframe the present around potential pasts and futures.

Mapping

Mapping is not simply a means of recording space, but is also a performance of making place.

Storytelling

Engaging and implicating others with an ethical responsibility: they care, now they need to take care.

Figure 2 – Overview of the Design Celium, a loose framework for biodiverse speculative design

Celium

The intention of this phase was to understand the research context and the embodied means of making sense of and exploration of futures through queer and more-than-human conceptual lenses. This led to something akin to a conceptual design framework, in which future-making approaches were brought together in a loose structure that could guide speculative design activities. This framework is not intended as a prescriptive structuring or an abstract theory, and so has been termed a "Design Celium", a play on a more-than-human and emergent assemblage, the fungal mycelium. The Celium as a way of arranging concepts that they might offer some ideas for a way forward through design. The Celium is to the more abstract side of the design continuum of general and specific, and is a formulation of more use to design researchers than as a field guide for community-oriented action.

The trajectory of this phase began with reading through theory, leading into design probes, conversations, workshops, design experimentation, qualitative coding, and assemblage as a design act.

Playset

The necessity to make the theoretical concepts of the Celium tangible and legible in community settings led to the emergence of the second project phase, the design of a Speculative Design Playset. The Playset is a set of activities and games, designed to make speculative design available in a productive way to biodiversity activists in community settings. In particular, it aims to help them become literate in multiple futures, and to generate collaborative speculative fictions and designs of those futures.

The trajectory of this phase encompassed design experiments in game design, play tests and workshops, story transcriptions, and reading through theory.

Design artefact outcomes

Celium

The Celium is briefly summarised here, as the focus of this paper is the The design of the Playset was framed by a set of requirements or aims to be met: to scaffold speculative fabulation and design activities by materialising the Celium; to make the abstract theoretical concepts usable for non-designers; to embody the conceptual principles of the Celium, particularly, to be guided by the conceptual figure of the Strange Stranger; that it is not a singular game, but that it supports a repertoire

of different practices, ranging from brief awareness raising gameplay, through short workshops, to extended community design projects.

The Playset is entitled Strange Strangers in Strange Lands, a riff on the title of Heinlein's Stranger in a Strange Land (Heinlein, 1961). It contains game objects and resources for a number of games and design activities, which will be summarised here, and are illustrated in figure 4.

Icebreaker Game: The icebreaker game is a Strange Strangers riff on classic parlour games like Who am I? and charades. Players have to select a Strange Stranger tile, throwing the dice to select a strategy to use to embody the strange stranger and get other players to guess what they are.

Situation Report: A research activity, where participants are guided by the Situation Report worksheet to assess a local biodiversity challenge which they may like to engage with through speculative fabulation and design.

Storytelling Game: Hexagonal tiles represent various Strange Strangers, more-than-human beings that might occupy an environment. Players select a speculative story prompt, and throw four dice to determine a year as the setting. A players take turns to place tiles and tell a story based on the prompt. The game has two aims. Scoring is determined by how many edges between tiles can be counted, and so the first aim is to build as dense a biodiverse network of beings-as possible; denser networks means a higher group score, but requires the storyteller to include all the tiles they touch into their part of the story. The second aim is related to a set of less desirable cards: monoculture tiles, representing things that oppose biodiversity and promote monocultures: poverty, war, deforestation and so on. These tiles result in a negative point score its edges, and can be removed by surrounding it by the Strange Stranger tiles (Figure 3).

Comparative Futures Discussion: If a few rounds of the game are played with different story prompts, this activity allows for a discussion of the different futures that emerged, framed using the Future Cone diagram, to consider how desirable, or how likely any of them are.

Speculative Design Challenge: This activity makes use of the deck of design cards; these are 45 cards, grouped broadly into the five futuring strategies of making, play and performance, time travelling, mapping and storytelling (although many activities encompass more than one strategy). These decks facilitate acts of speculative design, which will allow the fictional worlds to become materialised in the real world through design (Figure 6).

Figure 3 – The tiles of the Storytelling Game; players place Strange Stranger tiles around the speculative story prompt, telling a collaborative story incorporating the Strange Strangers.

Design process and reflection

Design process

The design of the Playset balanced design experimentation with ongoing playtesting and design workshops (Figure 5) and theoretical reflections. In particular, the workshop sessions allowed for practical and collaborative engagements, and played a clear role in developing and testing initial concepts, refining gameplay, and understanding how the Playset might work in a community context. Workshops often represented key moments of insight, and the boundaries of distinct phases of Playset design. These stages are summarised here:

Initial concept development: An initial exploration of using the Strange Stranger framing through an online workshop, for which early prototypes of the icebreaker game and design activities were created.

First Prototype: A first paper and 3D printed prototype which refined the icebreaker and design activities concepts was created. Through two play test workshops, refinements to these were created, but a key insight was that a way to abstract theoretical concepts to make them available for collaborative worldbuilding needed to be the core of the Playset; in short, a collaborative storytelling game was to be designed.

Storytelling Game Development: A collaborative game design session helped the conception of the storytelling game. Hand drawn paper prototypes and the gameplay and rules were refined through walkthrough and playtesting sessions, to create a playable prototype. Alongside this, the design activities were simplified into a deck of nine cards with design prompts.

Second Prototype: A complete printed paper prototype of the Playset was tested in two structured storytelling and design workshops, intended to test the overall trajectory of the Playset in workshop or design project settings. From these workshops, insights were gained into the way that the Playset is able to mediate the creation of fictional worlds, the debating of futures, and the exploration of them through speculative design, as well as further design development.

Prototype Refinement: The prototype was brought to a higher level of finish, with lasercut wooden tiles (see Figure 5), and the creation of a full deck of 45 design activity prompts. This prototype was tested in a workshop at the Cumulus Monterrey conference in 2024, which tested for the first time the use of the situation report, to align the gameplay with local biodiversity challenges.

Reflection on practice

During the prototype testing workshops, recordings were made of the storytelling sessions—these were automatically transcribed and edited into written fabulations, and were later illustrated by an artist—and the presentations of the design outcomes. Together with reflective discussions with workshop participants, these formed the basis of a reflection on practice on the development of the Playset, considering both participant reflections (considering such aspects a collaboration, speculative worldmaking, framing and scaffolding, and confusion) and designer-led reflections on the design process (considering participant engagement, storytelling aspects of sense of place, conscious worldmaking, dreamlike stories, temporality, and the scaffolding of speculation as design theory).

Discussion

In this discussion, consideration is given to the reciprocal questions of: How speculative design can support biodiversity activism? How queer and more than human conceptual lenses, through the conceptual figure of the strange stranger, can support a more diverse practice of speculative design? and How speculative design might give material weight to these conceptual framings? In addition, it addresses the question of how can a reflective Research through Design project that is methodologically

framed as post qualitative inquiry make a contribution to design theory, given the theoretical underspecification problem of design?

To do this, the discussion draws on two concepts already touched upon, Transitional Design Theory (Redström, 2017) and Assemblage (Wilkie, 2010); the Playset is framed as a Transitional Design Assemblage, an example or prototype of a definition by design, and thus a form of design theory, that is capable of mediating transitions from contextualised specifics to generalised abstracts. Such transitions can be understood in two axes, an ontological one (related to what exists) and an epistemological one (related to what is known). Ontologically, the Playset mediates transitions from concepts and theories related to pluriversal futures and socio-cultural (queer) and ecological (more than human) diversity, and the collaborative creation of fictional worlds and futures and speculative design artefacts. Epistemologically, the Playset mediates transitions between contributions to design knowledge, existing on a spectrum from a specific, contextualised design to a more general theoretical prototype.

This discussion considers then how the Playset mediates these ontological transitions between theory and practice across the epistemological spectrum of general to specific design knowledge, framing the Playset in two epistemological ways: as a SPECULATIVE DESIGN GAME that engages players with theoretical ideas in the specific context of playing a specific game and the creation of particular design futures; and as a PROTOTYPE OF A SPECULATIVE DESIGN PROGRAMME, offering insights into how these conceptual framings might support speculative design in wider contexts.

Playset as a game (a specific contextual artefact)

At the most contextual and specific level, framing the Playset as a game, or games, is to consider how it allows an assemblage of theoretical ideas epitomised by the strange stranger into collaborative world building, and subsequently to support speculative design materialisations of those worlds, through gameplay. This analysis of the Playset from a game perspective is framed by some theory regarding speculative design games, and collaborative storytelling games.

As an example of a speculative design game, The game explicitly allows for pluriversal realities, with all stories framed around the perspectives of a plethora of different Strange Strangers, and is designed to allow multiple stories to emerge during a single game, or for multiple different stories to emerge from each speculative prompt. It combines storytelling with play and performance: players don't simply tell a story, but are doing it in a playful context, and are able to assume the perspectives of the Strange Strangers during play. It is an iterative and reflective game, with each players' turn allowing for iterative storytelling, with the opportunity to reflect between turns and change approach
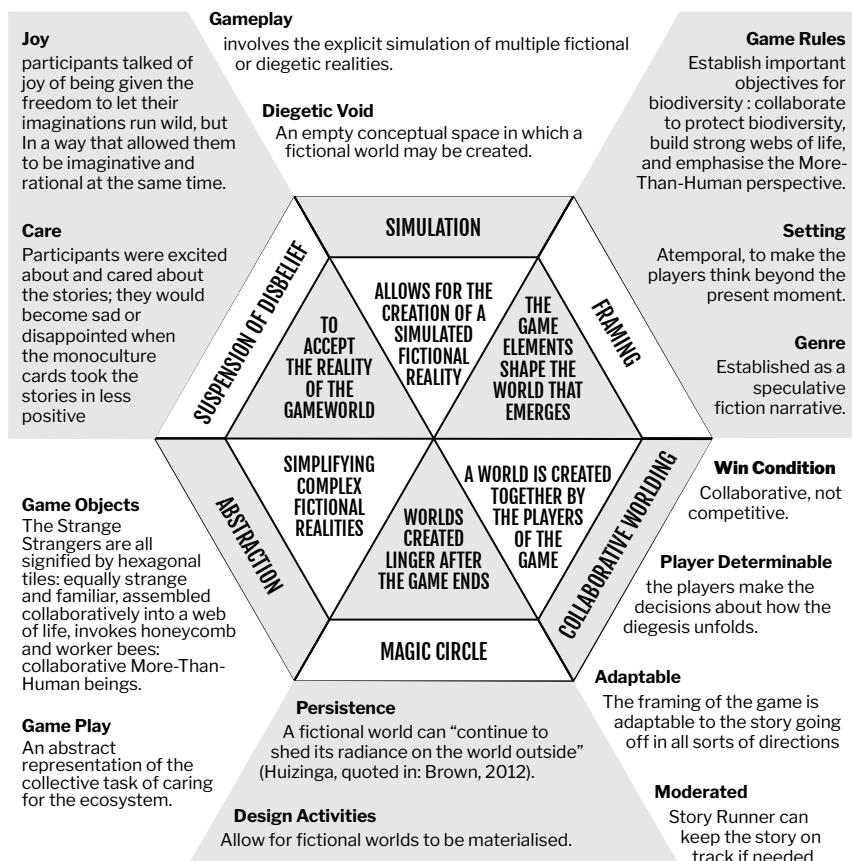
Figure 4 – This figure highlights Important aspects of collaborative storytelling games, analysing how the Playset achieves them.

or emphasis if wanted. It avoids simple reductionism by facilitating complex, and sometimes contradictory and messy stories. It encourages players to reflect on the speculative futures that are created, and be critical of them, rather than persuading them of their value.

As an example of a collaborative storytelling game, the Playset draws on some key aspects of game design theory, in terms of simulation, framings, collaborative worldmaking, abstraction, and suspension of belief. Figure x explains these, and details the ways in which the game achieves its effects and outcomes according to these factors.

Overall, it is demonstrated that the game, through its framings, objects and activities, draws on aspects from the theoretical lenses, in particular the Strange Stranger as a representative of more-than-human, de-categorical ways of thinking, and activates them, making them accessible to game players to allow for the creation of fictional worlds that draws on these theoretical ideas and strategies of future making.

Playset as a design programme (a more general prototype)

Having considered the Playset as a specific design artefact in a specific context, this paper now looks at it as a prototype of a way of doing speculative design. Redström proposed the design programme as a placeholder definition of an intermediary between the general and the specific (Redström, 2017), which can be framed as a transformative creative assemblage which mediates between theoretical framings and speculative futures. A design programme is a structured system that draws on paradigms and design practices and facilitates design projects towards the production of products. In this analysis, the Playset can be seen as an exemplar or prototype of a design programme. Drawing on some complex theoretical positions that have been structured by the design Celium, the Playset, a material and semantic assemblage, encapsulates and abstracts these within material artefacts, rules and gameplay, making them operational and available to hand to the players of the game, giving shape to the collaborative fictions created by the players. It therefore represents a prototypic example of what a biodiverse speculative design programme could be.

This analysis considers how the Playset itself represents a prototype of an emerging and transitional design programme, and how that prototype might be projected from a situated response to a particular design problem, as a guide to what a more general approach for biodiverse speculative design programmes could be.

The value here of the transitional design theory framing becomes clear: framing the design Playset as a design programme allows for these intermediaries to mediate between a specific design project and a more general framing for design in general, without becoming codified as an abstract and general theory, and thus avoiding the problems of specificity and cumulatively that makes design research often underspecified, and not well accounted for, by theory.

The following are some key principles that the Playset represents as a prototypical design programme: the framing of the Strange Stranger, and the importance of embracing all beings without hierarchy or presumption, understanding them as equally strange and equally familiar; the approach to world-making should be collaborative, emphasising the principle of sympoesis (Haraway, 2016), the idea of the world being mutually made together by all beings; the idea of the mutuality of storytelling becoming story-caring, that by sharing in some other beings' stories, the listener cares and then has an ethical responsibility to care; the value of intermediaries and in-between states, being able to sit with ambiguity and exploring it through playful encounters, which might be termed radical intimacy, as a path towards invoking better worlds; finding a path towards a practical hope that is grounded in collective action, without falling into despair or towards messianic fixes; and finally, an embrace of pluriversality, of multiple coexistent, mutually dependent worlds.

These are not presented as prescriptions, as a fixed structure for speculative design, but descriptions, prototypes of what might be possible and what might work.

Conclusion

In conclusion, this paper demonstrates the role of intermediaries in design as creative assemblages that facilitate useful transitions between theoretical abstraction and the specifics of design. It explores how a relationship can be mediated between diverse and ephemeral worldviews, philosophies and strategies and speculative design, using a design Playset as an exemplar of a biodiverse programme for speculative design; this demonstrates how such strategies can help overcome some of the deficiencies of diversity in speculative design practice, and offer the possibility of speculative design being a meaningful tool for supporting community biodiversity activism.

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REFERENCES

Adams St. Pierre, E. (2014). *Post qualitative inquiry: Keynote lecture*. Australian Association of Research in Education, New Zealand Association for Research in Education, Brisbane, Australia. https://www.aare.edu.au/assets/documents/ Elizabeth-Adams-St.-Pierre-ppt-presentationv1.pdf

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Bellacasa, M. P. de la. (2017). *Matters of care: Speculative ethics in more than human worlds*. University Of Minnesota Press.

Blythe, R., & Stamm, M. (2017). Doctoral training for practitioners. In *Practice based design research*.

Candy, L. (2006). *Practice based research: A guide* (p. 19). University of Technology. https://www.mangold-international.com/_Resources/ Persistent/764d26fd86a709d05e8d0a0d2695bd65fd85de4f/Practice_Based_ Research_A_Guide.pdf

Coulton, P., Gradinar, A., & Burnett, D. (2016). Games as speculative design: Allowing players to consider alternate presents and plausible futures. *Design Research Society 50th Anniversary Conference*, Brighton, UK.

Deleuze, G., & Guattari, F. (1994). *What is philosophy?* Colombia University Press.

Dunne, A., & Raby, F. (2014). *Speculative everything: Design, fiction, and social dreaming*. MIT Press.

Ellis, E. C. (2018). *Anthropocene: A very short introduction*. Oxford University Press.

Frayling, C. (1993). Research in art and design. *Royal College of Art Research Papers*, 1(1).

Gaver, W. (2012). What should we expect from research through design? *Proceedings of the 2012 ACM Annual Conference on Human Factors in Computing Systems - CHI '12* (p. 937). https://doi.org/10.1145/2207676.2208538

Guttorm, H., Hohti, R., & Paakkari, A. (2015). "Do the next thing": An interview with Elizabeth Adams St. Pierre on post-qualitative methodology. *Reconceptualizing Educational Research Methodology*, 6. https://doi.org/10.7577/rerm.1421

Haraway, D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.

Jakobsone, L. (2017). Critical design as approach to next thinking. *The Design Journal*, *20*(sup1), S4253–S4262. https://doi.org/10.1080/14606925.2017.1352923

Latour, B. (2007). *Reassembling the social: An introduction to actor-network-theory* (New Ed.). Oxford University Press.

Mazzei, L. (2020). Postqualitative inquiry: Or the necessity of theory. *Qualitative Inquiry,* 27, 107780042093260. https://doi.org/10.1177/1077800420932607

Morton, T. (2010). Queer ecology. *PMLA*, 125(2), 273–282.

Muñoz, J. E. (2009). *Cruising utopia: The then and there of queer futurity*. NYU Press.

Prado de O. Martins, L. (2014). *Privilege and oppression: Towards a feminist speculative design.* http://a-pare.de/2014/privilege-and-oppression-towards-a-feminist-speculative-design/

Redström, J. (2017). *Making design theory* (Illustrated edition). The MIT Press.

Savransky, M., Wilkie, A., & Rosegarten, M. (2017). *Speculative research: The lure of possible futures*. Routledge.

Søndergaard, M. L. J., Campo Woytuk, N., Howell, N., Tsaknaki, V., Helms, K., Jenkins, T., & Sanches, P. (2023). Fabulation as an approach for design futuring. *Proceedings of the 2023 ACM Designing Interactive Systems Conference,* 1693–1709. https://doi.org/10.1145/3563657.3596097

Sterling, B. (2011, February 5). Design fiction: Diegetic prototypes. *Wired*. https://www.wired.com/2011/02/design-fiction-diegetic-prototypes/

Tironi, M., & Díaz Bejarano, N. (2024). Reimagining cohabitation with data in a damaged planet: Towards interspecies design. *Design Across Borders: United in Creativity*. Cumulus, Monterrey.

Tonkinwise, C. (2014). *How we intend to future: Review of Anthony Dunne and Fiona Raby, Speculative everything: Design, fiction, and social dreaming. Design Philosophy Papers*, 12(2), 196–187.

UN. (2019, May 6). UN Report: Nature's dangerous decline 'unprecedented'; Species extinction rates 'accelerating'. *United Nations Sustainable Development.* https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/

Warner, M. (Ed.). (1993). *Fear of a queer planet: Queer politics and social theory* (First edition edition). University of Minnesota Press.

Wilkie, A. (2010). *User assemblages in design: An ethnographic study*. Goldsmiths, University of London.

Wilkie, A., Michael, M., & Plummer-Fernandez, M. (2015). *Speculative method and Twitter: Bots, energy and three conceptual characters*. https://journals.sagepub.com/doi/abs/10.1111/1467-954X.12168

The aesthetic impacts of solar farms with the contributions of plants and spiders

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ABSTRACT

This paper acknowledges the growing production of renewable energy at solar farms, e.g. global solar photovoltaic capacity grew by 25% in 2023 alone and several studies have shown that solar farm conditions differ from the surrounding natural environment and its microclimate can be extreme. Nevertheless, there are nature-based solutions that mitigate the negative impacts on biodiversity and increase recreational value of the area. This paper also acknowledges the impact of solar farms on human communities, namely possible loss of local identity and negative visual impact. Furthermore, it is accepted that aesthetics, i.e. morphologic beauty, is closely related with the fact that beautiful things work better. Knowing that the solar panel installation in the landscape benefits the local biodiversity while producing energy may affect positively the attitudes of humans. In fact, aesthetic experiences can imply emotion, and they can justify new designs of solar farms, also with plants and creative installations. A landscape is shaped by ontological design and the purpose of this paper is to provide a first step to understand the impacts of these new configurations on biodiversity and humans, with focus on the shadowing effect and morphologic beauty. Literature review is the main tool and a closer look to Alentejo and Azores is assumed.

Introduction

Today, to achieve decarbonization goals, due to global climate change and growing energy needs, the investment in solar energy is increasing (Cohen-Shachama et al., 2019; IEA, 2025), e.g. global solar photovoltaic capacity grew by 25% in 2023 alone (IEA, 2025) and, in Portugal, in February 2025, 81,2 % of the electricity consumption was supplied by renewables, from these, photovoltaics counted for 7,7 %, with increasing installed capacity (APREN, February 2025).

Some authors acknowledge microclimatic changes due to solar farms, as in Figure 1, defined as ground-mounted photovoltaic (PV) arrays and electrical infrastructure (Mamun et al., 2022).

Nevertheless, the impacts of solar panels' shadowing on biodiversity are largely unknown. In this context, agrivoltaics, i.e. solar farms with agricultural functions (Thomas et al., 2023), are presented as a mitigation solution (Nordberg et al., 2021). In fact, the best sites for solar farms are also the best ones for agriculture and pastoralism (Mamun et al., 2022), being their choice, a result of an evaluation considering that solar panel power generation is mainly influenced by dust accumulation, ambient temperature, solar insolation and the tilt, azimuth angle of the array, wind and humidity (Mamun et al., 2022; Hasan et al., 2022).Furthermore, today it is possible to add new configurations to agrivoltaics, such as solar hotels and lakes with solar panels (Carvalho & Cunca, 2024), because there are countless new materials and a reduction of production costs (Manzini, 1993). Figure 2 displays a lake that might imply new emotions due to distinct aesthetic experiences (Marković, 2012).

The purpose of this paper is to provide a first step towards the understanding of the impacts of new configurations both on biodiversity and humans (Armstrong, 2019), with focus on the shadowing effect (Mamun et al., 2022), morphologic beauty (Norman, 2004; Mead, 1926) and a holistic solution-search approach (Fuller, 1998). This literature review focus on (i) nature-based solutions for biodiversity concentrating on plants and spiders, ii) human health, environmental justice and design for social impact especially morphological beauty.

Plants and spiders

The installation of solar farms impacts biodiversity (Suuronen et al. 2017a; Armstrong et al., 2021; Mamun et al., 2022). Nevertheless, conventional solar farms use rows of solar panels as the most efficient and effective configuration but when nature conservation and morphologic beauty are also objectives, that changes, and agrivoltaics becomes the best approach (Mamun et al., 2022). The configuration of agrivoltaics systems influences power generation through: (i) insolation, because direct insolation is more

Figure 1 – Solar farm (Carvalho with OpenArt, 2025).

Figure 2 – Solar lake (Carvalho with OpenArt, 2025).

effective; (ii) tilt, orientation and the least incident angle of sunlight; (iii) ambient temperature, because as air temperature increases by 10 °C, efficiency diminishes 0.5 %, and with plants panel temperature in daytime, throughout the spring and summer, was ~8.9 ± 0.2 °C cooler; (iv) increasing dust accumulation reduces electricity generation, but at agrivoltaics dust is reduced; and (v) crop height, distance between pillars and height of ground clearance, are design concerns (Mamun et al., 2022). Furthermore, impacts and electricity production vary across landscapes, geographical locations, types of crops and native ecology (Mamun et al., 2022). Additionally, it is expectable to obtain different outcomes in Alentejo, the region of south Portugal with hot and dry Summers, high insolation, and large flat areas (Galveias et al., 2024), when compared to Azores, the archipelago with 9 islands in the north Atlantic Ocean, where the prevalent climate is temperate with no dry season (Elias et al., 2019). Nevertheless, at Praia da Vitória, Terceira Island, Summers are hot and dry (Elias et al., 2019) and there is a solar farm.

Plants

Plants are organisms who live due to photosynthesis, are the producers of ecosystems, and sense the world around them, living always at the same site (Moore, R. et al., 1998). Consequently, the most relevant negative environmental impact of solar farms is the vegetation removal (Arteaga et al., 2020). Other ecological impacts are: (i) loss of biodiversity; (ii) breaking the migration corridors; and (iii) changes in the species abundances and habitat fragmentation (Tsoutsos et al., 2005; Suuronen et al., 2017a). Also, two microclimatic conditions can be identified at a solar farm, with impact variations: (i) under solar panel; and (ii) between the solar rows, being this last one possibly extremely hot since

the panels produce heat and wind cannot enter the solar panel area (Suuronen et al., 2017a).

In agrivoltaics, due to decreases of air temperature and daily variation in humidity during summer, under solar panels, mainly due to shading, plants shade-tolerant are the most suitable. Also important is to understand that different types of solar panel installation technics create distinct shading and imply different microclimate conditions (Suuronen et al., 2017a).

Additionally, plants under the panels can experience an increase of dust deposition on leaves, decreasing photosynthetic effectiveness, as they will not be exposed directly to rain (Mamun et al., 2022). Furthermore, although impacts are plant-specific, some researchers (Schindler et al., 2018) mention that all plants possibly experience longer flowering bellow solar panels.

When designing new solutions, adding morphologic beauty can be possible (Carvalho & Cunca, 2024; Carvalho & Cunca, 2025), but the designer should be aware that there are endangered plant species, limited scientific knowledge about them and restoration possibilities (Lambert et al., 2022). In this context, ecologic scientific studies can help evaluating species diversity, meaning the number of species, and are useful to identify species confined to particular geographical areas, i.e. endemisms (Whittaker et al., 2001). In Alentejo, montado is the main forest (Galveias et al., 2024), and in Azores, laurissilva forest is the endemic forest (Costa & Borges, 2021), both with distinct plant species. Platanthera azorica (Flora-on, 2025a; Bateman et al., 2013), from Azores and Centaura crocata (Flora-on, 2025b), from Alentejo, are examples of endangered endemisms.

Spiders

Regarding the impact on fauna, the study of spiders is very important, because: (i) they need plants to support their nets (Moore et al., 1998; Suuronen et al. 2017a); and (ii) they protect crop species by controlling the pest species abundance (Rajeswaran et al., 2005), being an example of ecosystem services for biodiversity maintenance (Oliver et al., 2015). Furthermore, it is assumed that spiders might be the most likely beneficiaries of solar farms specially if vegetation is added to solar farms, increasing their abundance (Armstrong et al., 2021). Additionally, at Azores, there are researchers who study the impacts of anthropogenic activities on spiders for decades, being Spiders (Araneae), the arthropod taxon with the higher number of species at the Archipelago level, and it can be found in association with trees and shrubs (Tsafack et al., 2022). Two of the most important findings were: (i) more native spiders exist where more native plant species also exist (Arteaga et al., 2020); and (ii)

there are invasive spider species with adaptation capabilities (Boieiro, 2024), for example, Phidippus audax.

Because possibly new configurations imply new impacts (Suuronen at al., 2017a) and at islands niche habitats and island biogeography are paramount (Kadmon & Allouche, 2007), the design problem statement (Cross, 2003) might be: use solar panels to create small habitats, for native spiders in association with native vascular plants. This knowing that spiders also use the mount legs and the back surface of solar panels to build their nets (Suuronen et al., 2017b).

Human impacts

Not only biodiversity is impacted by the installation of solar farms, the same holds true for humans (Thomas et al., 2023). The benefits that these ecosystems provide to humans, namely ecosystem services or direct and indirect positive impacts (Walston et al., 2022), are: community income, new jobs, potential tax revenues (Mamun et al., 2022; Suuronen et al. 2017b), regulating services such as erosion control and supporting services such as photosynthesis and pollination (Walston et al., 2022). Negative impacts include loss of local identity and visual pollution (Suuronen et al., 2017b).

Design, looking to the connection between identity, landscape, and territory (Cunca, 2019; Cunca & Semedo, 2019), can help defining new configurations with their aesthetics, i.e. morphologic beauty, whose impacts can be possibly identified using interviews and surveys (Suuronen et al., 2017b). The design problem statement can be "to maintain local identity restoring local biodiversity". This acknowledging sympoiesis, meaning human evolution together with other ecological assemblages (Haraway, 2016, pp. 58-59). Assuming design as a conversation about possibilities and inaugurations of modes of being (Escobar, 2018, pp. 1-35) and a avoiding an excess of messages and images, something that can be considered semiotic pollution (Manzini, 1993).

Environmental justice and design for social impact

Nevertheless, the negative impacts are uneven across communities being the concept of environmental justice used to mitigate such unevenness. It is defined as the meaningful and fair treatment of all people, regardless of color, race, income or national origin, with respect to development, implementation and enforcement of regulations, laws and policies (Baretta, 2012). Meaningful means that people affected should have the possibility to participate and influence the decision-making process.

To achieve environmental justice can be used a design justice approach defined as design in collaboration, implying the participation in and work

with community-based organizations and social movements, with the objective of using design to heal, sustain and empower local communities (Constanza-Chock, 2020).

Here design also acquires the role of identity redefinition, in which both traditional identities and 'invented' traditions, together with the notion of membership to 'taste cultures', namely tourists, become important. This in a globalisation context (Sparkle, 2004) where old proposals as the science circles by al-Akhbārī (MCG, 2024) and new creations (LAGI, 2025) are available as inspirational assets, looking to the elements of design, i.e. colours, shapes, forms and textures (Oei & Dekegel, 2002).

A local ecotourism approach can be an incentive to the conservation of natural elements and be designed as a sustainable service (Penin, 2018), using the Okala Ecodesign Strategy Wheel reducing material, distribution and usage impacts, through innovation to obtain system longevity.

At an agrivoltaics site tourists could learn how: (i) predatory spiders destroy pests (Rajeswaran et al., 2005); (ii) flowers, as in Rousseau's paintings (Bouret, 1961), are examples of natural beauty in creative assemblages; (iii) the Azorean flowers decreased in size and lost strong colours due to the insular reality (Dias et al., 2005); (iv) "attractive things work better" (Marcus, 2002); (v) vegetation benefits electricity production with solar panels; (vii) laurissilva forest exists in Azores (Dias et al., 2005) and montado in Alentejo (Galveias et al., 2024); and, finally, (viii) local communities can contribute to the complex local biodiversity conservation.

Simplicity at agrivoltaics

The complexity pointed out in previous sections can be an obstacle to the management and efficacy of an agrivoltaics project, as a solution to reduce the negative impacts of solar farms (Nordberg et al., 2021). Nevertheless, the 1st, 2nd and 4th laws of simplicity mentioned by Maeda (2006, pp. 1-43) can be helpful to obtain a more sustainable agrivoltaics. The first law 'Reduce', through the method SHE (Shrink, Hide, Embody), firstly implies the identification of all features, namely: (i) energy production (Walston et al., 2022); (ii) food production (Mamun et al., 2022; Walston et al., 2022); (iii) regulating services such as carbon sequestration (Walston et al., 2022); (iv) cultural services (Walston et al., 2022); (v) supporting services such as pollination and biodiversity conservation (Walston et al., 2022); (vi) tourism (Cunha & Abrantes, 2014); and (vii) research.

In Alentejo, due to decreased numbers of human population, cultural services are removed, being production of energy and food a priority. In Terceira, because native vegetation is restricted to 5 % of the island, at high elevations containing original habitats (Costa & Borges, 2021) and due to the closeness to Praia da Vitória, food production is removed, and restauration of local flora is a priority for conservation and tourism

purposes. In both contexts, surrounding the installation with endemic trees can hide solar panels, e.g. L. azorica, in Azores (Tsafack et al., 2022), and Quercus genus, in Alentejo (Galveias et al., 2024), becoming a solution that might be welcomed by local communities (Olson-Hazbourn et al., 2016). Embodying a sense of quality can possibly be achieved stressing the research and tourism services.

The second law 'Organize' implies the process SLIP (Sort, Label, Integrate, Prioritize). Four groups of ecosystem services are created and labelled: (A) Services, including (iv) and (vi); (B) Conservation, including (iii) and (v); (C) Production, including (i) and (ii); and (D) Research including (vii). Groups (B) and (D) are integrated. The first priorities are groups (C) and (B+D). The second priority is (A), only possible due to the success of the first priorities.

The 4th law 'Learn' can be obtained through bioblitz (Roger & Klistorner, 2016), defined as an intense period of collaborative effort, with scientists and community members, to discover and record living species. Also, through people's usage of agrivoltaics, designers can understand their needs and if the installation fulfils them (Norman, 2004).

Discussion

A local design approach can be understood as a counterweight to the idea of one modern world or to the idea of a unique approach to mitigate climate change. Similarly, Escobar (2018, pp. 6-7) proposes the concept of pluriverse, meaning the space of many worlds inside our planet, searching for a new design, more local, against misrepresentation and communal erasure. Furthermore, Haraway (2016, pp. 55-56) proposes the Chthulucene, made up of practices of becoming and ongoing multispecies stories, tentacular, complex, in precarious times, to designate the actual historical time. Both concepts apparently stress a human humility due to lack of knowledge about nature and impacts of anthropogenic activities. As a result, researchers should suggest solutions that are completed or proposed by local human communities, designing a new landscape, such as a solar farm, that assemblages existing abiotic and biotic elements, of an unfinished world, in a dwelling social and technical environment (Beaubois, V., 2015). In Figure 3, a human path sketch is displayed as a tool for brainstorming with local farmers.

Conclusions

This paper contributes to understand the impacts of new configurations at agrivoltaics. The main conclusions are the following:

(i) Local and external objects appropriated by design to assemble a renewed landscape with solar panels came from a 'tentacular' changing world; and,
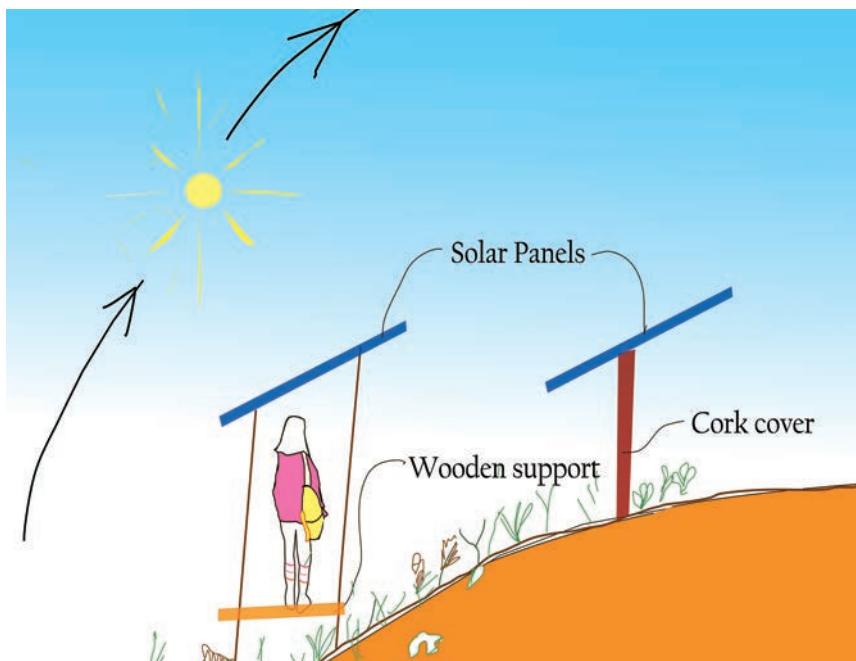
Figure 3 – Human path (Carvalho 2025).

(ii) Local plants and spiders often live together, and this scientific knowledge can be an opportunity but also limit to design.

Future research implies asking the opinion of local people about agrivoltaics, using surveys, interviews and brainstorming. Also, the analysis of updated ecologic data regarding the impact of agrivoltaics on biodiversity, can be relevant for new design suggestions.

REFERENCES

APREN (February 2025). *Boletim Eletricidade Renovável Fevereiro 2025* (pp. 1-17). Associação de Energias Renováveis, 1-17.

Armstrong, E. (2019). Armstrong, E. (2019). *Eco-Artistic strategies directed toward human/world attunement. Art Culture and Environments*.

Armstrong, J., Kulikowski, A., & Philpott, S. (2021). Urban renewable energy and ecosystems: Integrating vegetation with ground-mounted solar arrays increases arthropod abundance of key functional groups. *Urban Ecosystems, 24*, 621–631. https://doi.org/10.1007/s11252-020-01063-6

Arteaga, A., Malumbres-Olarte, J., Gabriel, R., Ros-Prieto, A., Casimiro, P., ... & Borges, P. (2020). Arthropod diversity in two historic gardens in the Azores, Portugal. *Biodiversity Data Journal, 8*, e54749. https://doi.org/10.3897/BDJ.8.e54749

Bateman, R. M., Rudall, P. J., & Moura, M. (2013). Systematic revision of *Platanthera* in the Azorean archipelago: Not one but three species, including arguably Europe's rarest orchid. *PeerJ, 1*, e218 https://doi.org/10.7717/peerj.218.

Beaubois, V. (2015). Design, assemblage, and functionality. In *Deleuze and design* (pp. 173-190). Edinburgh University Press. https://doi.org/10.1515/9780748691555-008. hal-04387234

Beretta, I. (2012). Some highlights on the concept of environmental justice and its use. *e-cadernos CES*. https://doi.org/10.4000/eces.1135

Boieiro, M., Varga-Szilay, Z., Costa, R., Crespo, L., Leite, A., ... & Borges, P. (2024). New findings of terrestrial arthropods from the Azorean Islands. *Biodiversity Data Journal, 12*. https://doi.org/10.3897/BDJ.12.e136391

Bouret, J. (1961). *Henri Rousseau* (1st ed.). Editions Ides et Calendes.

Carvalho, R., & Cunca, R. (2024). The aesthetics of ecology at a solar farm. *Segundo Foro Iberoamericano de Investigación en Diseño*. Madrid.

Carvalho, R., & Cunca, R. (2025). A design of solar farms: An ecologic and aesthetic approach. To be published in *CONVOCARTE, N.° 16/17: Arte e Ecologia*. https://convocarte.belasartes.ulisboa.pt/

Cohen-Shachama, E., Andrade, A., Dalton, J., Dudley, N., Jones, M., ... & Walters, G. (2019). Core principles for successfully implementing and upscaling Nature-based Solutions. *Environmental Science & Policy, 98*, 20-29.

Constanza-Chock, S. (2020). *Design justice: Community-led practices to build the worlds we need*. The MIT Press.

Costa, R., & Borges, P. (2021). SLAM Project - Long Term Ecological Study of the Impacts of Climate Change in the natural forest of Azores: I - The spiders from native forests of Terceira and Pico Islands (2012-2019). *Biodiversity Data Journal, 9*. https://doi.org/10.3897/BDJ.9.e69924

Cross, N. (2003). *Engineering design methods: Strategies for product design* (2nd ed.). John Wiley & Sons Ltd.

Cunca, R., & Semedo, C. (Coords.) (2019). *O Design para a Vida/Design for Life*. Câmara Municipal de Castelo Branco.

Cunca, R. (2019). Design, Identidade e Produção Local. *i + Diseño*, XI (14), 150-163.

Cunha, L. & Abrantes, A. (2014). *Introdução ao Turismo* (5th ed.). LIDEL.

Dias, E., Mendes, C., Melo, C., Pereira, D. & Elias, R. (2005). Azores Central Islands Vegetation and Flora Field guide. *Quercetea*. 7, 123-173.

Elias, R., Brito, M., Pimentel, C., Nogueira, E. & Borges, P. (2019). Biota from the coastal wetlands of Praia da Vitória (Terceira, Azores, Portugal): Part 4 – Vascular plants. *Biodiversity Data Journal*, 7. https://doi.org/10.3897/BDJ.7.e38687

Escobar, A. (2018). *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds. Duke University Press.*

Flora-On (2025a, April 7th). *Platanthera+azorica.* https://acores.flora-on.pt/#/1Platanthera+azorica

Flora-On. (2025b, April 7th). *Centaura+crocata.* https://flora-on.pt/?q=Centaurea+crocata

Fuller, R. (1998). *Manual de instruções para a nave espacial Terra* (2nd ed.). VIAOPTIMA.

Galveias, A., Duarte, E., Raposo, M., Costa, M., Costa, A., & Antunes, C. (2024). Trends in land cover and in pollen concentration of *Quercus* genus in Alentejo, Portugal: Effects of climate change and health impacts. *Environmental Pollution, 362*. https://

doi.org/10.1016/j.envpol.2024.124996

Haraway, D. (2016). Staying with the trouble: Making kin in the Chthulucene. In *Staying with the Trouble*. Duke University Press.

Hasan, K., Yousuf, S., Tushar, M., Das, B., Das, P., & Islam, Md. (2022). Effects of different environmental and operational factors on the PV performance: A comprehensive review. *Energy Science & Engineering, 10*(2), 656-675. https://doi.org/10.1002/ese3.1043

IEA (2025, April 6th). *Latest findings: Solar PV is set to become the largest renewable energy source by 2029*. https://www.iea.org/energy-system/renewables/solar-pv

Kadmon, R. & Allouche, O. (2007). Integrating the Effects of Area, Isolation, and Habitat Heterogeneity on Species Diversity: A Unification of Island Biogeography and Niche Theory. *The American Naturalist*, 170(3), 443-454.

Lambert, Q., Gros, R., & Bischoff, A. (2022). Ecological restoration of solar park plant communities and the effect of solar panels. *Ecological Engineering*, 182, 106722.

Land Art Generator (LAGI) (2025, January 8th). https://landartgenerator.org

Maeda, J. (2006). *The Laws of Simplicity*. The MIT Press.

Mamun, M., Dargusch, P., Wadley, D., Zulkarnain, N. & Aziz, A. (2022). A review of research on agrivoltaic systems. *Renewable and Sustainable Energy Reviews*, 161, 1-16.

Manzini, E. (1993). *A matéria da invenção. CENTRO PORTUGUÊS DE DESIGN*.

Marcus, G. (2002). *What Is Design Today?* (1st ed.). Harry N. Abrams.

Marković, S. (2012). Components of Aesthetic Experience: Aesthetic Fascination, Aesthetic Appraisal, and Aesthetic Emotion. *I-Perception*, 3(1), 1-17.

Matthews, T. & Whittaker, R. (2015). On the species abundance distribution in applied ecology and biodiversity management. *Journal of Applied Ecology*, 52, 443-454.

Mead, G. (1926). The nature of aesthetic experience. *The Int. Journal of Ethics*, 36(4), 382-393.

Moore, R., Clark, W. & Vodopick, D. (1998). *Botany (*2nd ed.*)*. McGraw-Hill, xxiv + 919.

Museu Calouste Gulbenkian (MCG) (2024, December 29th). Mirza Muḥammad al-Akhbārī (c. 1764-1817). *A Oferta ao Imperador: Círculos das Ciências e Tabelas dos Números (Tuḥfat al-Khāqān:Dawāʾir al-ʿulūm wa-jadāwil al-ruqūm)*.

Nordberg, E., Caley, M. & Schwarzkopf, L. (2021). Designing solar farms for synergistic commercial and conservation outcomes. *Solar Energy*, 228, 586–593. https://doi.org/10.1016/j.solener.2021.09.090

Norman, D. (2004). Emotional Design. *Basic Books*.

Oei, L. & Dekegel, C. (2002). *Rediscovering colours, textures, forms and shapes: The elements of design*. Thames & Hudson.

Oliver, T., Isaac, N., August, T., Woodcock, B., Roy, D.. & Bullock, J. (2015). Declining resilience of ecosystem functions under biodiversity loss. *Nat Commun,* 6. https://doi.org/10.1038/ncomms10122

Olson-Hazbourn, S., Krannich R. & Robertson, P. (2016). Public views on renewable energy in the Rocky Mountain region of the United States: distinct attitudes, exposure, and other key predictors of wind energy. *Energy Res Soc Sci*, 21, 1–179.

Penin, L. (2018). *An introduction to service design: Designing the invisible*. Bloomsbury Visual Arts.

Rajeswaran, J., Duraimurugan, P. & Shanmugam, P. (2005). Role of spiders in agriculture and horticulture ecosystem. *Journal of Food, Agriculture & Environment*, 3(4), 147-152.

Roger, E. & Klistorner, S. (2016). BioBlitzes help science communicators engage local communities in environmental research. *Journal of Science Communication*, 15(3), A06.

Schindler, B., Blaustein, L., Lotan, R., Shalom, H., Kadas, G. & Seifan, M. (2018). Green roof and photovoltaic panel integration: Effects on plant and arthropod diversity and electricity production. *Journal of Environmental Management*, 225, 288-299.

Sparkle, P. (2004). *An introduction to design and culture: 1900 to the present*. Edition 2.0. Routledge.

Suuronen, A., Lensu, A., Kuitunen, M., Andrade-Alvear, R., Guajardo Celis, N. ... & Kukkonen, J. (2017b). Optimization of photovoltaic solar power plant locations in northern Chile. *Environmental Earth Sciences* 76(24). https://doi.org/10.1007/s12665-017-7170-z

Suuronen, A., Muñoz-Escobar, C., Lensu, A., Kuitunen, M., Guajardo Celis, N. ... & Kukkonen, J. (2017a). The Influence of Solar Power Plants on Microclimatic Conditions and the Biotic Community in Chilean Desert Environments. *Environmental Management,* 60(4), 630-642. https://doi.org/10.1007/s00267-017-0906-4

Thomas, S., Thomas, S., Sahoo, S., Kumar, A. & Awad, M. (2023). Solar parks: A review on impacts, mitigation mechanism through agrivoltaics and techno-economic analysis. *Energy Nexus*, 11, 1-12.

Tsafack, N., Gabriel, R., Elias, R., Boieiro, M., Ferreira, M. & Borges, P. (2022). Arthropods and other biota associated with the Azorean trees and shrubs: Laurus azorica (Seub) Franco (Magnoliophyta, Magnoliopsida, Laurales, Lauraceae). *Biodiversity Data Journal*, *10*. https://doi.org/10.3897/BDJ.10.e80088

Tsoutsos, T., Frantzeskakib, N. & Gekasb, V. (2005). Environmental impacts from the solar energy technologies. *Energy Policy*, 33, 289–296.

Walston, L., Barley, T., Bhandari, I., Campbell, B., McCall J. ... & Dolezal, A. (2022). Opportunities for agrivoltaic systems to achieve synergistic food-energy-environmental needs and address sustainability goals. *Front. Sustain. Food Syst.*, 6.

participation, place and creative intervention

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Arrenda-se T0
Artistic activism and Portugal's housing crisis

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ABSTRACT

The present study critically examines the current housing crisis in Portugal through the lens of contemporary artistic responses, with a particular focus on the author's site-specific performance. It adopts an art-based, practice-led research methodology, combining theoretical inquiry with personal artistic creation as a form of social critique. In recent years, Portugal has experienced soaring property prices and intensifying real estate speculation, making access to adequate accommodation increasingly difficult, particularly in major cities like Lisbon. This situation has triggered a series of societal consequences, including housing precarity, rising homelessness, evictions, and forced migration to peripheral areas. In response, the artistic community has actively engaged with the issue, using creative expression to foster reflection and resistance. Among the various manifestations that have emerged, this study centers on the installation/performance *Arrenda-se T0* (Studio for Rent), conceived and carried out by the author. Employing assemblage techniques, the work critiques exclusionary dynamics and speculative practices within Portugal's housing market. The analysis reveals how contemporary conditions shape artistic practices and foster narratives of resistance that advocate for the fundamental right to dignified living. The findings suggest that art can function as a powerful vehicle for raising awareness and critical reflection, encouraging public dialogue and potentially inspiring policy responses to address structural inequalities. This research underscores the intersection between artistic creation and urgent collective issues, demonstrating how creative interventions can provoke reflection and expose the systemic injustices embedded in housing access and policy.

KEYWORDS

Housing crisis, Portugal, artistic expression, social critique

Introduction

The housing crisis in Portugal has intensified over the past decade, becoming one of the country's most pressing social challenges. The rapid rise in property prices and growing real estate speculation have transformed major urban centers, especially Lisbon, into areas marked by exclusion and displacement. With the capital ranking among the most expensive cities in Europe, many residents now face severe housing insecurity, forced to move to peripheral areas or endure increasingly precarious living conditions. Rolnik (2019) argues that housing has become a global commodity driven by financial capital, undermining its fundamental social role.

This phenomenon is shaped by structural and conjunctural forces, including speculative investments, mass tourism, and rising levels of foreign capital in the real estate sector. As a result, housing costs have become increasingly misaligned with Portugal's wage structure, exacerbating social inequality and hindering access to dignified living conditions. Harvey (2012) suggests that urban space has become a central arena for capital accumulation, contributing to the displacement of vulnerable populations and the consolidation of exclusive urban zones. In response, residents have mobilized through protests and demonstrations, demanding more inclusive and equitable housing policies.

These social dynamics have also reverberated through cultural and artistic fields, where artists have increasingly responded to the crisis by using their work as platforms for reflection and critique. Among recent artistic interventions, the installation/performance *Arrenda-se T0 – Studio for Rent*, created by the author, stands out. The piece, built through the technique of assemblage, examines the exclusionary and speculative practices embedded in Portugal's housing system. In this sense, the project aligns with Rancière's (2009) assertion that art can unveil the hidden tensions of society and open new perceptual and political horizons. His perspective underscores how artistic creation can transcend aesthetics to expose structural injustices and contest dominant power relations.

This study explores the role of art as a form of critical engagement and social awareness in response to Portugal's housing emergency. Through an in-depth analysis of *Arrenda-se T0*, it examines how contemporary housing conditions shape artistic practices and contribute to resistance narratives that defend the fundamental right to dignified living.

Housing crisis in Portugal

In recent years, Portugal has faced an increasingly intense housing crisis, marked by a significant disparity between the population's income and housing costs. In 2025, the national minimum gross salary was set at 870 euros per month, a value that remains significantly misaligned with

the elevated costs of living and property acquisition. According to data from the Ministry of Labour (2023), 56% of workers in the country earned less than a thousand euros per month, with this percentage reaching 65% among young people under 30. Additionally, the same ministry estimates that, in the second quarter of 2024, about 21% of workers in Portugal received the minimum wage. Although specific data on income distribution in 2024 is not yet available, it is likely that the concentration of workers with incomes close to the minimum wage continues, reflecting the country's wage structure.

This crisis results from a series of complex and interconnected factors. Real estate speculation plays a central role, with the opening of the market to foreign investors, combined with tax benefits, accelerating property valuation. The gentrification of historic and central neighborhoods, driven by urban renewal projects aimed at higher-income classes, has contributed to the exclusion of long-standing residents. Mass tourism and the growth of short-term rental platforms, such as Airbnb, have also reduced the availability of long-term rental properties, increasing market rates and exacerbating the difficulty of securing adequate accommodation. In Lisbon, these factors, among others, have increased the cost of living, forcing low- and middle-income residents to seek housing alternatives in peripheral areas or leave the city altogether.

As a result of these dynamics, the social and economic impacts are increasingly reflected in national statistics. According to Causa Pública (2024), Portugal currently has the most unfavorable ratio between income and housing prices since 1995. Between 2013 and 2023, property values rose by 121%, while income levels increased by only 30%. The crisis is particularly severe in metropolitan areas such as Lisbon, Porto, and the Algarve region, where purchase prices have more than doubled. In 2023, the international index Housing Anywhere, which analyzed 64,000 properties across 23 European cities, ranked Lisbon as the most expensive capital in Europe for renting, with the average monthly cost of a one-bedroom apartment reaching €2,500 (Expresso, 2023). Additionally, according to the National Institute of Statistics (INE) (2024), the rate of severe housing deprivation rose from 4.7% to 6% between 2016 and 2024, underscoring the worsening living conditions experienced by a growing segment of the population.

The lack of effective public policies to address this crisis has been one of the main challenges for the government. Without concrete measures to balance the market and ensure that housing is an accessible right, the trend is for the housing crisis to continue affecting more and more people, especially young people and low-income families, highlighting the structural inequality in income distribution and access to housing. These disparities have not only shaped social and economic landscapes,

but have also begun to reverberate in cultural and artistic domains, creating fertile ground for artistic interventions that critically reflect on these living conditions and give voice to experiences of exclusion and resistance.

The role of art in the context of the housing crisis in Portugal

In recent years, artists and collectives in Portugal have increasingly turned their attention to the housing issue, producing works that expose social inequalities and the devastating effects of urban transformation. Far beyond simple denunciation, these artistic manifestations provoke critical reflection on the housing emergency, highlighting the consequences of an unregulated and exclusionary real estate market. Simultaneously, they shed light on the precarious living conditions and dehumanization resulting from speculation and displacement.

The installation *Desalojamento Local* (*Local Dislodgement*), created by artist Bordalo II, consisted of a set of tents symbolizing the impact of the housing crisis in Lisbon. In 2023, he installed four tents at the Miradouro de São Pedro de Alcântara, mimicking the architecture of traditional Lisbon houses. One of the tents bore the name Rua Angústia (Anguish Street), signaling the emotional toll of gentrification and forced displacement. In public statements, the artist emphasized the urgency of regulating speculative real estate practices, which, according to him, strip dignity from many to benefit a few. By occupying a prominent touristic viewpoint, the work challenged the visual and symbolic norms of public space, compelling passersby to confront the contradictions of the urban landscape.

The *ROOF* project, by photojournalist Mário Cruz, resulted from ten years of documenting the realities of housing exclusion in Lisbon. His photographs portray families and individuals living in precarious and unsafe conditions—in abandoned buildings, derelict factories, vacant schools, or rusted containers—due to the lack of access to adequate housing. In 2024, these images were presented in an immersive, multidisciplinary exhibition at the Antigo Recolhimento das Merceeiras, located in the historic district of Alfama. The building, temporarily provided by the Santa Casa da Misericórdia de Lisboa, allowed for a partial reconstruction of the environments Cruz had documented. By choosing marginal and overlooked spaces as subjects, the project underscores the invisibility of vulnerable populations in official urban narratives.

At the 2024 festival *Uma Revolução Assim – Luta e Ficção: A Questão da Habitação*, artistic practices were positioned at the center of a collective effort to reimagine housing justice. Among its highlights was the project *Passa Cá em Casa*, which featured twelve artistic interventions hosted inside private homes in Lisbon. These intimate encounters addressed

various dimensions of the housing crisis, inviting the public into personal spaces for performances and presentations. The project fostered close interaction between artists and audiences, encouraging reflection on alternative modes of living and reinforcing the role of art as a catalyst for civic engagement and a tool for imagining more inclusive urban futures.

Arrenda-se T0

Within this increasingly present theme in contemporary art in Portugal, my trajectory found expression in the installation/performance *Arrenda-se T0*, carried out in 2023. This work reflects a lived experience of displacement, prompted by the housing crisis in Lisbon. This personal engagement echoes what Bourriaud (2002) describes as a shift toward *relational aesthetics*, where art emerges from social contexts and aims to foster human interactions and political awareness.

When I emigrated from Brazil to Portugal in 2019, I initially settled in Lisbon, where I managed to rent a T1 in the São Vicente neighborhood. At that time, high prices made it difficult to find affordable housing. As an independent artist with limited income, the amount of rent directly impacted my financial health. After a year in the capital, I was forced to leave Lisbon and move to the municipality of Seixal, on the outskirts. Although the rent was more affordable, it still represented more than 50% of my income, compromising my budget stability. This economic pressure brought not only financial strain but also a persistent sense of uncertainty and vulnerability.

This scenario, combined with the suffering of friends and acquaintances going through similar difficulties, had a significant emotional impact. The growing population of homeless people, the eviction of families, and visible suffering became present realities in daily life, leading me to express this anguish through art, my main form of expression.

Although I didn't yet know concretely what the work would be, I began collecting doors, windows, and wood from an abandoned factory in Seixal, the Mundet factory. It was then that the idea of building a house emerged, which would be furnished and become an installation and a manifesto about the housing crisis. As the construction process advanced, other ideas began to emerge, and I decided to integrate a performance into the installation. Thus, *Arrenda-se T0* was born.

The work took shape as a T0 house built in a precarious and improvised manner with materials collected from Mundet and furnished with objects found on the streets of Seixal. The performance was conceived as an ironic critique of property speculation and the dehumanization of the housing system. In it, I would play a fictional housing agent, founder of the company *Rottenstein Real Estate*, and attempt to rent the "remodeled" T0 to the public passing by the chosen location for

Figure 1 – *Arrenda-se T0*. Photograph by Carlos Menezes in the artist's studio, days before the performance. © Ticiano Rottenstein, 2023.

Figure 2 – *Arrenda-se T0*. Act at the Rectory of the University of Lisbon. © Ticiano Rottenstein, 2023.

the installation. The symbolic rent amount was set at €1,800, reflecting the prevailing rental conditions in Lisbon's overheated market. The project critiqued not only economic inequality but also the emotional disconnection that characterizes speculative urbanism. This approach

resonates with Kester's (2011) notion of dialogical art practices, which challenge dominant ideologies by foregrounding lived experience and collective voice.

With the work completed, the next step was to find the right location and time to perform the piece. After unsuccessfully attempting to obtain permits from the Urban Art Gallery (GAU) of the Lisbon City Council, I chose to proceed with the project spontaneously and without authorization.

It was at this moment that I contacted the organizers of the *Casa Para Viver* and *Movimento Habitação de Abril* demonstrations, who were planning a national demonstration in defense of the right to housing for September 28, 2023. They encouraged me to present *Arrenda-se T0* during the event and connected me with students from the student movement, so that the installation would also be carried out in front of the rectorate of the University of Lisbon.

Act 1: rectory of the University of Lisbon

I arranged with the students to hold the event on September 27, the day before the national demonstration. Upon arriving at the rectorate of the University of Lisbon, I was surprised by the massive presence of journalists from television, radio, and print media. The structure of the house was designed for easy transport and assembly. In less than an hour, the studio apartment was ready for the performance to begin, while the students started their protest. The presentation lasted over four hours, and at the end of the event, the students requested not to dismantle the house, as they wished to spend the night in it. The following day, they made the first symbolic payment for the house: €0.08.

Act 2: Rossio Square

On September 28, the national demonstration for the right to housing was scheduled, with thousands of people participating in 22 cities across Portugal. I returned to the rectorate to dismantle the installation and headed to Rossio Square, the chosen location for the performance. This square, one of Lisbon's most iconic tourist spots, would serve as the stage for the demonstration's conclusion. With the demonstration planned to arrive at Rossio in the late afternoon, I decided to set up the house early to perform during the day, without being overshadowed by the concentration of demonstrators.

Upon arriving at the square, I contacted the police, who, after understanding the proposal, allowed me to proceed with the plan. The house was installed in front of the statue of King Pedro IV. The performance lasted over 10 hours, with temperatures exceeding 30

degrees Celsius. The interaction with the public was striking and moving, with surprised tourists, guides attempting to explain the situation, and Lisbon residents sharing their experiences. The media coverage was intense, and the performance was widely reported.

The public's interaction generated a range of reactions, from empathy to indignation. The most touching moment, however, was hearing testimonies from people directly affected by the housing crisis. These stories, filled with pain and frustration, revealed the difficulties of an invisible reality for many, where the right to housing was denied in such inhumane ways. Those words, laden with personal and social experiences, were filled with palpable anguish but also with a deep desire for change and recognition.

Among the accounts were those of individuals marginalized by the economic system who, despite their struggles, found themselves systematically excluded from public policies and housing solutions. There was a sense of abandonment, as if the most basic needs were treated with indifference. Many of these testimonies emerged with an emotional intensity that remained etched in my memory, revealing not only the pain of loss but also the urgent need for concrete actions.

At the end of the day, when the demonstration arrived at the square and thousands of people joined the protest, I realized the magnitude of what was happening. Although exhausted, a sense of great accomplishment overcame me. Not only because I had managed to carry out my plan, but also because I perceived the profound impact of the performance. The work was not just an artistic manifestation but also a bridge between the public and the harsh reality of the housing crisis.

It was at that moment that I understood, in a visceral way, the power of art as a means of awareness and critique. It was not merely a vehicle for exhibition or expression; it became a reflection of the pains and struggles of society, touching people's hearts and forcing them to confront a reality that, often, we choose to ignore. This experience revealed how art can act as a catalyst for both individual and collective transformation. It is capable of challenging, moving, and inspiring, generating deep reflection on the issues that shape our world and, more importantly, on what we are willing to do to change that world.

The power of art in times of crisis

Art transcends mere representation of society and becomes a catalyst for critical awareness, reflection, and transformation. *Arrenda-se T0* illustrates how artistic practice can confront complex and often uncomfortable realities, challenging dominant narratives and exposing hidden structures of inequality. Artists, through their singular perspectives, reinterpret the world by transforming lived experience into expressive forms that mobilize critical engagement. In this sense, politically engaged art, as

Figure 3 – *Arrenda-se T0*. Act at the Rossio Square. © Ticiano Rottenstein, 2023.

Figure 4 – *Arrenda-se T0*. Act at the Rossio Square. © Ticiano Rottenstein, 2023.

Demos (2013) argues, constitutes a space of resistance and imaginative potential, capable not only of denouncing systemic injustices but also of envisioning more just and inclusive futures.

Beyond its role in denunciation, art serves as a powerful medium for public consciousness. By translating complex problems in an accessible and emotional way, art sensitizes the public, provoking attitude

shifts and stimulating critical thinking. Rather than simply mirroring reality, it interrogates it, fosters debate, and opens new perspectives. According to Adorno (2003), art functions as a form of "determinate negation," challenging dominant logic and offering alternative visions. By transforming difficult realities into images, sounds, and participatory experiences, art creates a symbiotic bond with the viewer, often deeper than verbal discourse. Installations like *Arrenda-se T0* can provide more impactful insights into contemporary challenges than conventional reports by placing the audience at the heart of the experience.

Art also acts as a space for both personal and collective introspection. Each creation reflects not only the artist's inner world but also mirrors the viewer's perceptions and emotions. It encourages audiences to reassess their assumptions, feelings, and roles within society. On a collective level, it becomes a platform for convergence, enabling diverse perspectives to intersect. Through interaction with artworks, viewers often recognize shared experiences, fostering a deeper and more unified understanding of the social forces that shape our world.

Although art may not directly resolve the crises it addresses, it remains a potent force for social change. Its capacity to raise awareness and stir public consciousness can lead to meaningful transformation in both individual attitudes and collective behavior. Furthermore, art holds the potential to influence public policy by emotionally engaging decision-makers and revealing the human dimensions of systemic issues. As Bourdieu (1996) points out, art is a space of symbolic struggle, where individuals and institutions negotiate and contest the terms of social order. In this light, art is not simply reflective; it is generative of change, capable of initiating dialogue and inspiring action.

Ultimately, art is one of the most effective tools for stimulating societal shifts. It transcends passivity and asserts itself in the public sphere, mobilizing, connecting, and inspiring. Through their work, artists create shared spaces of reflection, where contemplating a piece becomes an invitation to reimagine the world and our relationships within it. When embraced as a means of expression and transformation, art enables deeper comprehension of contemporary realities and encourages more humane and empathetic responses to social crises. In doing so, it becomes a vital, unifying force, one that challenges established systems and illuminates pathways toward a more just and conscious future. It goes beyond denunciation by offering audiences the opportunity to experience pressing issues on a sensorial and emotional level, creating a space for meaningful reflection.

The housing crisis, as a theme of artistic resistance, extends beyond questioning the status quo; it promotes a broader conversation about fundamental societal values, such as the right to housing and the preservation of human dignity. In the absence of effective public policies

to counter speculation and gentrification, art becomes an essential tool for rendering visible the often-silenced realities of exclusion. As Rancière (2009) notes, art is not confined to aesthetic enjoyment; it serves as a site where new ways of sensing and interpreting reality are formed. In this sense, art is a key ally in exposing injustice and affirming the fundamental right to live with dignity.

By employing art to interpret crises like housing precarity or other urgent social issues, we gain access to a language that surpasses the limits of conventional discourse. Thus, art not only denounces but also builds bridges between individual experience and collective struggle, expanding our understanding of the challenges that shape our lives and offering a platform from which new imaginaries and solidarities may emerge.

In this context, *Arrenda-se T0* demonstrates how artistic production rooted in lived experience can function as both expression and research. Situated in a public space and anchored in everyday material conditions, the project contributes to what is increasingly recognized in academic and artistic circles as practice-led research. This methodology values artistic creation as a form of situated, embodied knowledge, reinforcing the idea that meaningful insights can emerge not only from theoretical abstraction but also from direct engagement with social realities through creative processes.

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REFERENCES

Adorno, T. W. (2003). *Teoria estética* [*Aesthetic theory*]. Unesp.

Bourdieu, P. (1996). *A distinção: Crítica social do julgamento* [*Distinction: A social critique of the judgement of taste*]. Marco Zero.

Bourriaud, N. (2002). *Relational aesthetics*. Les Presses du Réel.

Causa Pública. (2024). *Portugal tem uma das maiores crises habitacionais da Europa* [*Portugal has one of the biggest housing crises in Europe*]. https:// causapublica.org/estudos/portugal-tem-uma-das-maiores-crises-habitacionais-da-europa/

Demos, T. J. (2013). *The migrant image: The art and politics of documentary during global crisis*. Duke University Press.

Expresso. (2023). *Lisboa lidera ranking das cidades europeias mais caras para alugar um imóvel* [*Lisbon leads ranking of Europe's most expensive cities to rent a property*]. https://www.expresso.pt

Harvey, D. (2012). *Rebel cities: From the right to the city to the urban revolution*. Verso.

Housing Anywhere. (2023). *Relatório sobre preços de aluguel na Europa – 2023* [*Report on rental prices in Europe – 2023*]. https://www.housinganywhere.com

Instituto Nacional de Estatística. (2024). *Indicadores de privação habitacional em Portugal* [*Indicators of housing deprivation in Portugal*]. https://www.ine.pt

Kester, G. H. (2011). *The one and the many: Contemporary collaborative art in a global context*. Duke University Press.

Ministério do Trabalho. (2023). *Relatório sobre a distribuição salarial em Portugal* [*Report on salary distribution in Portugal*]. https://www.mtsss.gov.pt

Rancière, J. (2009a). *A estética como política* [*Aesthetics as politics*]. Relume Dumará.

Rancière, J. (2009b). *A parte do pobre: Arte e política* [*The share of the poor: Art and politics*]. Editora 34.

Rolnik, R. (2019). *Guerra dos lugares: A colonização da terra e da moradia na era das finanças* [*War of places: The colonization of land and housing in the era of finance*]. Boitempo.

Undulantion
A case study of participative sculpture

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ABSTRACT

This project proposed the development of a process of collaborative artistic creation, at a disciplinary intersection in the area of visual and performing arts, with the aim of creating a sculpture together with the local community. Contact with the community was established by a development association that promotes social transformations, and maintained through a cycle of performative workshops, interspersed with textile workshops. Based on the local textile tradition, and material and immaterial heritage, the workshops provided moments of reflection on know-how. Using textile waste from local industries, the challenge was given to participants to create weaving fragments, which would serve as raw material to carry out the work. The use of fabrics or threads from partner factories is not only an ecological gesture, but also a symbolic one, representing the history and reality of the region and promoting a sense of belonging. Highlighting the transformative and participatory role that art can play in local contexts, the workshops sought to reflect collectively by exploring the relationships that art can have from a social, educational and sustainable point of view. The work resulting from this process is not just a physical object, but a tangible symbol of community collaboration and local transformation. The sculpture will not only be in space but will also carry with it the meaning of belonging, sustainability and collective history, changing the perception of the neighborhood itself and strengthening the bond between residents and the place where they live.

KEYWORDS
Participatory sculpture, identity, community, people

Introduction

Art plays a fundamental role in the construction of knowledge, the promotion of dialogue, and the possibility of social intervention. It not only reflects reality but can also transform it, becoming a means of connection between individuals and groups. Based on this premise, the MATÉRIAS project aimed to create a sculpture through a co-creation process in a Municipal Housing Neighborhood in the parish of Teixoso (Covilhã).

Using textile waste from local industries, the residents of Bairro das Nogueiras and the surrounding community were invited to create woven pieces, which served as raw materials for the artwork.

As Ferreira de Castro states in his book *A Lã e a Neve* (2022):

> At the beginning of summer, before heading to the highlands of the mountains, sheep and rams would leave their winter coat in the hands of their owners. Washed by strong arms, later spun, the wool would one day reach the loom. And weaving would begin. The man moved the crude wooden structure with his feet while his hands performed the miracle of transforming the coarse material into strong fabric. This act constituted a domestic industry, which each person practiced for their own benefit, as the mountains provided nothing more, in those distant times, than wool and rye.
>
> (Castro, 1919, p. 9)

Covilhã has a long-standing tradition linked to the textile industry, which has shaped its cultural and economic identity over the centuries. The production of fabrics and other wool-based elements is part of the region's tangible and intangible heritage. However, with the decline of the textile industry, many of these practices have lost their place, in some cases becoming mere collective memories.

Reviving this know-how and integrating it into contemporary artistic practices can represent a form of cultural appreciation and creative innovation. The project aimed to explore this historical heritage through different artistic languages, such as weaving, performance, and textile installation, creating spaces for experimentation and dialogue between tradition and contemporaneity.

The project began with a public presentation in Bairro das Nogueiras, where its objectives were introduced, and the community was invited to join the working team. To initiate the creative process and foster greater understanding and trust among participants, a performance workshop was held.

The creative process started with a series of weaving and performance workshops, led by professionals in the artistic and textile fields and directed toward the community. The participatory approach ensured that

the community was not just a spectator but a protagonist in the artistic creation process. The aim was to integrate participants into a creative journey that strengthened local identity, valued traditional knowledge, and encouraged reflection on the role of art in sustainable practices.

From this collective reflection emerged the question: how can participatory artistic thought and creation serve as a tool for interpreting reality, raising awareness, and fostering a sustainable vision? This was one of the key premises for the sculptor and project coordinator, who combined the conceptual and textile elements produced collectively to create a sculptural work that intersects various disciplinary fields within the visual arts.

Participation in practice

Participatory art is characterized by collective construction, in which participants contribute to the selection of materials, the development of form, and the narrative of the artwork. This approach broadens the meaning of sculpture, as it ceases to be an object created by a single artist and becomes a living and dynamic process.

According to Grant Kester, socially engaged artistic practice is one in which the aesthetic experience is built in a way that challenges conventional social perceptions. In other words, it is more concerned with communication and praxis than with form. In the book *Conversation Pieces: Community and Communication in Modern Art*, the author demonstrates how these artworks are structured through processes of exchange and dialogue that unfold over time. They challenge conventional notions of art, which are based on a concept of aesthetic experience as instantaneous (Kester, Grant H. 2004, p. 50).

As Cruz et al. (2017, p. 32) state, "participation generates participation." In other words, the willingness to participate seems to be connected to previous experiences of this nature in individuals' life paths. From another perspective, participation is also related to the degree of connection that individuals feel—or do not feel—with their own effective participation, which explains their greater or lesser involvement with the sculpture.

Defining phases for participation and artistic experience can be a way to better understand the transition of the spectator as an active body in response to these proposals. This statement does not aim to formalize participation, let alone categorize, compartmentalize, or turn the interaction of the spectator into an object of formal analysis. On the contrary, analyzing the artistic experience through its phases can provide a better understanding of the reasons and mechanisms behind its establishment.

It can be considered that there is an active transition phase from spectator to participant, that is, from observation to action. This transition—from

contemplation to action, from analyzing the environment to adopting an attitude toward it—occurs through the artwork's proposal for participation (Bishop, Claire. 2006, pp. 12-13).

Corporality, matter and community

The intersection of participatory sculpture, performance, and weaving opens an artistic field in which creation becomes a process, an experience, and a dialogue. The fusion of these elements allows for the exploration of art as a space of encounter between the body, the material, and the community, expanding the participation of the collective not only as spectators but as active subjects in the artwork.

By integrating weaving into this context, the sculpture acquires textile layers, creating flexible and textured surfaces that evoke artisanal tradition and collective memory. The fibers and threads, when woven together, form three-dimensional structures that resemble social and community networks, symbolizing the interconnectedness of the participants. Applied theater, in turn, has a strong social character, enabling different groups to engage in the creative process, making it a reflection of the diversity and multiple voices of the community.

The thread and the body are symbolic elements that connect sculpture, performance, and weaving. The thread, beyond being physical material, represents connections, narratives, and networks of relationships. When used in a performance, it suggests tensions, displacements, and flows. The body, when interacting with the textile sculpture, becomes an extension of the artwork, intertwining with the threads, navigating the paths created by the fabric, or even transforming into part of the sculpture. The space, activated by human presence and textile materiality, becomes fluid, capable of being shaped and transformed through performative interactions.

This interconnection evokes ancestral rituals in which the act of weaving was both a utilitarian and symbolic practice, representing the link between times, histories, and territories. When this tradition is inserted into the contemporary context of participatory sculpture, it opens a new field of possibilities for interpreting identity, memory, and sustainability

The selection of materials in this artistic crossover proves essential in strengthening the links between sculpture, weaving and performance. Yarns and fabrics carefully collected from local factories - such as Lança, Penteadora and J. Gomes - take on a new role here, underlining the urgency of sustainability and the poetic potential of transforming waste. Although the municipality of Covilhã has a unit dedicated to textile recycling, and despite the factories' clear desire to redirect their production surpluses, it remains difficult to implement truly sustainable solutions integrated into a circular production cycle.

Figure 1 – Participant in choosing subjects (Ana Mena, 2024).

Figure 2 – Participant warping (Ana Mena, 2024).

Figure 3 – Participant weaving (Ana Mena, 2024).

Natural materials such as wool evoke the relationship with nature and ancestral practices; malleable and transformable elements such as aluminum and flag respond to the movement of the body and the wind.

The concept of *saber-fazer* (know-how) refers to the knowledge acquired and transmitted over time, rooted in traditional practices and the collective experience of a community. It is not limited to a technique

but involves a deep understanding of materials, processes, and the sociocultural context in which these practices develop. In the field of art, this knowledge can be reinterpreted and re-signified, creating forms of expression that engage in dialogue with the past, present, and future.

In today's environmental and social context, saber-fazer plays a crucial role in the search for more sustainable practices. The appreciation of artisanal techniques, the reuse of materials, and experimentation with natural resources become essential strategies for rethinking production and consumption methods. Collaborative and participatory projects, in which the community actively engages in artistic creation, contribute to the construction of a more collective and conscious culture.

The main aim of the Weaving workshops was to create textile pieces for the construction of artistic objects, while at the same time passing on technical knowledge and raising awareness of structural issues related to environmental, social and economic sustainability. The first workshop consisted of a guided tour of the Wool Museum, allowing participants to learn about the wool cycle, from sheep to yarn. From the second session onwards, the meetings were always held in Bairro das Nogueiras, where the four looms available in the room - given to the project by the museum itself - and their various components were presented.

There was then an introduction to the process of preparing the loom: choosing between carded or combed yarns, depending on the intended purpose; assembling the warp, defining the number of meters needed; selecting patterns and the type of stitch to be used - plain, twill or satin. There was a practical demonstration of the application of the warp on one of the looms, and then the weaving process began. The colors and threads used were always chosen by the person at the loom, giving the practice an authorial and intuitive character. The weaving stitch, in turn, was suggested by the trainers as a guide and to share the technique.

Although all the participants were from the municipality, it was surprising that, out of a group of eighteen people, only three were familiar with the Wool Museum and its permanent exhibition. Interestingly, some of the participants had worked for years in textile factories in the region, although almost always in the same job. The opportunity to sit down for the first time in front of a loom in creative freedom was experienced with enthusiasm - a re-encounter with matter and memory, now in a new light.

Participatory sculpture, when integrating elements of performance and applied theater, transforms into an expanded field of artistic experimentation, in which the creative process goes beyond merely constructing a three-dimensional object and instead includes actions, gestures, and interactions between body, space, and materiality. In this way, sculpture is not just contemplated but lived and activated by those who build and interact with it (Cruz et al., 2017, p.21).

Figure 4 – Performance with 7th year students from Teixoso school (Ana Mena, 2024).

Figure 5 – *Ondulância* (Ana Mena, 2024).

In the book *Theater of the Oppressed*, Augusto Boal explores the pedagogical and didactic possibilities of dramatic art from a diachronic and concrete perspective of artistic and collective dialogues established within the group. The methodology developed by the author allows both actors and non-actors to construct dramatic narratives based on their realities, exploring a more radical, transgressive, unsettling, and political theater. In the context of this project, these artistic approaches are applied to the community of Teixoso, fostering autonomy and emancipation.

> (...) it is theater in the most archaic sense of the world: all human beings are actors because they act, and spectators because they observe. (...) it can be practiced in the solitude of an elevator, in front of a mirror (...), in a public square for thousands of spectators. Anywhere... even inside a theater. (...) Theatrical language is the human language par excellence.
>
> (Boal, 1991, p. 13)

Performance introduces an essential element: the body - a means of creation and interaction - in its temporal and ephemeral dimension. Applied theater, understood as a dramaturgy of space and objects, was activated in two ways throughout the project.

On the one hand, in the workshops, through the sharing of memories, experiences and corporealities related to the thematic universe of creation - in the act of weaving, manipulating materials, tensing threads and shaping forms. These exercises acted as a catalyst: they broke the ice between the participants, promoted uninhibited gestures and allowed alternative forms of expression to the word, opening up space for the body as a vehicle for intimate and collective narratives.

On the other hand, during the public presentation of the installation, in different exhibition spaces - at the Garagem do Bairro das Nogueiras, the gallery of the Museu de Lanifícios and the Faculdade de Belas-Artes da Universidade de Lisboa - the co-authors put on a performance, individually inviting the public to get involved in gestures that explored the space and the materiality of the sculpture.

In this way, the sculpture assumes itself as a body in constant transformation, where movement and human presence are fundamental elements of its poetic and sensory composition.

Disciplinary crossings

Community-based artistic practices fall within a broader conception of art, as they enable new forms of expression and connection across various fields of knowledge. These approaches combine different languages, materials, techniques, and disciplines to create something new and

innovative. They break away from rigid categories, exploring intersections between art, technology, science, activism, education, and other areas.

> These are practices that follow the principles of collective creation, based on the stories of people and places, and do not stem from a pre-existing dramaturgy. On the contrary, the proposal is that dramaturgy is generally generated through improvisation exercises (Erven, 2001; Boal, 1977). Three essential characteristics stand out in the development of these practices, which must be taken into consideration: a theoretical and aesthetic structure that guides those involved; a duration that follows a sequence from beginning to end without 'skipping' stages; and the final presentation of the creation (Matarasso, 2017).
>
> (Cruz et al., 2017, p. 34)

The *Ondulância* installation evokes the streams of Covilhã, two watercourses originating from the Serra da Estrela mountain range that flow through the city at altitudes ranging from 800 to 500 meters: the Carpinteira Stream and the Goldra Stream. These streams marked the boundaries of the city's expansion and played a significant role in the development of the textile industry.

Standing approximately two meters tall, the sculpture rises, creating the sensation of a frozen dance in time, as if the wind had shaped the fabric itself. Thus, the sculpture is not merely a physical object but a tangible symbol of community collaboration and local transformation. It exemplifies how participatory art can integrate and act as an agent of change, providing a space for critical reflection on social, cultural, and environmental issues.

In a field shaped by the fusion of different areas such as art, education, and politics, it is essential to maintain an ongoing conceptual definition of artistic practices and participation, especially those grounded in community-based dynamics.

Conclusion

The intersection of participatory sculpture, performance, and weaving creates a hybrid field of experimentation, in which art, body, and material intertwine in a dynamic and inclusive process, dissolving the boundaries between spectator, creator, and artwork. This approach expands the meaning of sculpture, which ceases to be a fixed object and becomes an experience where the body, time, and interaction take center stage. This fusion allows participants not only to observe but to experience the artwork, becoming active agents in its creation and transformation.

By working with sustainable materials and traditional techniques in a

contemporary context, this process revives memories, fosters reflections on identity and community, and proposes new forms of artistic interaction. At the intersection of these languages, sculpture becomes a space of encounter and transformation, where material, gesture, and narrative intertwine to create sensory and symbolic experiences.

REFERENCES

Boal, A. (1991). *Teatro do oprimido, e outras poéticas políticas* (6ª ed.). Rio de Janeiro: Civilização Brasileira.

Bishop, C. (2006). *Participation*. Cambridge: The MIT Press.

Castro, Ferreira de (2022). *A lã e a neve* (2ªed.). Cavalo de Ferro.

Cruz, H.; Bezelga, I. & Aguiar, R. (Coords.) (2017). *Práticas artísticas: participação e comunidade*. CHAIA/EU Centro de História de Arte e Investigação Artística, Universidade de Évora.

Kester, G. H. (2004). *Conversation pieces: Community and communication in modern art*. University of California Press.

Sculpture with the community

Visible and invisible layers of participation in the era of (inner)sustainability

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ABSTRACT

This paper examines sculpture projects we developed with different communities, between 2022 and 2025, in various Portuguese cities and contexts, including *Being Stream*, *Air of the Stars*, and *All Living Earth!*. These projects explore the interplay between artistic participation, spiritual traditions, and the emerging concept of inner sustainability. Drawing on insights from ancient and contemporary spiritual wisdom, the article expands the concept of participation to encompass tangible and intangible dimensions of: humans, the natural world, physical spaces, inanimate objects. This expanded notion of participation reveals interconnectedness, where all entities and elements contribute to a shared process of creation. The methodologies employed integrate meditative, reflective, and creative practices, fostering a transformative experience to enhance individual and collective awareness. By intertwining spiritual traditions with creative artistic practices, the projects exemplify how participatory art can serve as a catalyst for inner sustainability—balancing external actions with internal well-being. These projects allowed the enhancement of inner skills essential in contemporary society, such as imagination, creativity, awareness of the present moment, valuing and appreciating simple things as walking or breathing; reflecting and sharing about the creative process and deeply listening the others; expansion of feelings of belonging and gratitude; restauration of the deep kinship with ourselves, other beings, Nature and Earth.

KEYWORDS

Sculpture, participation, inner sustainability, spiritual wisdom traditions

Introduction

> Just as the universe manifests in multiple layers of existence, from the densest to the most subtle, so too is the being composed of multiple levels, from the body to the infinite essence of consciousness.
>
> Taittiriya Upanishad (n.d.)

In this essay, we reflect on several key issues that we consider essential when designing and implementing an artistic project involving a community. We begin with the premise that we live in an era where wisdom from various spiritual traditions is becoming increasingly accessible. Knowledge that was once transmitted exclusively from masters to aspirants and disciples is now available to anyone with interest or curiosity. Different cultures coexist in our lives, no longer tied to a specific place or time (Han, 2022). We have instant and simultaneous access to all cultures[1].

In light of the wisdom—both ancient and contemporary—present in spiritual traditions, how can we deepen the notion of participation, particularly in artistic projects involving communities? How can we design and implement artistic projects that foster more holistic perspectives on existence? How can these projects nurture all participants in ways that contribute to sustainability—both in relation to the Earth and to the inner well-being of each individual (inner sustainability)?

Behind the scenes of participation

The visible and the invisible in participatory art

Who participates in a participatory art project? How do they participate? In what way are they present?

In Ancient Greek, the concept of participation was expressed through two distinct terms, each implying different levels of depth: *metochí* (*μετοχή*) and *metéxis* (*μέθεξις*). The first, *metochí*, referred to a more practical or everyday form of participation—taking part in a social event, an activity, or an assembly. The second, *metéxis*, carried an ontological and metaphysical meaning. This notion of *metéxis* emphasized the experiential and communal nature of Greek theatre. Attending theatrical performances during the six days of Dionysian celebrations was an

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1 The philosopher Byung-Chul Han called this phenomenon hyperculturality, in which different cultural forms coexist simultaneously. Hyperculturalism is characterized by a particular mode of perception in which a set of images, signs or ideas are not restricted to one nation or one historical time but are all available to anyone at the present moment, creating a new experience of time and space.

educational and transformative process rather than a mere form of entertainment (Burdik, 1978). From this Greco-Roman tradition, we have inherited the idea of art as a path to self-improvement—a vision of culture as a means for moral, intellectual, and spiritual maturation (Matarasso, 2019; Andresen, 2021).

When considering contemporary artistic projects that involve community participation, we can also recognize echoes of Greek theatre as an immersive, reflective, and transformative communal event. In a participatory art project[2], all participants are immersed in a shared creative process—an alchemical space in which everyone is transformed[3].

There are different types of participation and varying levels of complexity in how participants are engaged (Beech, 2008; Cruz, 2015; Matarasso, 2019). The designers of a project can invite and activate participants' presence in multiple ways. Even if there are different roles in decision-making and not all participants hold the same level of authority, participation implies that everyone contributes and influences the unfolding process:

"The artist relies upon the participant's creative exploitation of the situation that he/she offers – just as participants require the artist's cue and direction. The relationship between artist/participant is a continual play of mutual tension, recognition and dependency" (Bishop, 2012, p. 279).

Artists foster a sense of belonging (Ribeiro, 2015, Preface) and connection (Gablik, 1995), offering a "dynamic experience" (Bishop, 2012, p. 246), creating "contexts" (Kester, 2013, p. 1)[4], and adopting an attitude of service (Lacy, 2004) in both ethical and spiritual dimensions[5]. Furthermore, they contribute to the creation of a "field of consciousness" (Sacks, 2019), enhancing awareness of the interconnectedness of all forms of life. In community projects that involve the creation of artistic objects, "the

2 We use the term participatory art in line with the approach proposed by authors such as François Matarraso (2019), Hugo Cruz (2015) and Dave Beech (2008): participation refers to situations in which participants move within a structure pre-established by the artist; collaboration (or community art) presupposes that collaborators intervene in decision-making regarding structural aspects of the project.

3 A participatory art project activates a process of transformation for the artists who conceive the process and for those who participate in it. For the sake of simplifying language, we make this distinction between roles (artists and participants) but in reality we consider that all human beings are artists, in the sense of creators, in that we all have creative potential and ultimately we are always creating our lives through the decisions and actions we take, consciously or unconsciously.

4 Kester created the concept of dialogical practice to refer to processes in which artists, in an attitude of self-decentralization, create contexts for dialogue and debate between various actors. The author emphasizes the invisible side of this type of practice - the content of what is said, the intonation with which it is said and the whole range of emotions that are conveyed during a process of verbal communication.

5 Suzanne Lacy draws a parallel between engaged Buddhism and the new genre of public art, arguing that the common ground is the idea of service: "Both are community endeavors as well as, to some degree, spiritual practices" (Lacy. 2010, p. 299).

discoveries made adjust themselves, and the work emerges from the collective, bearing the marks of each individual" (Fróis, 2021, Introduction).

Natural world

The term participatory art generally refers to human involvement. However, it makes sense to extend the concept of participation to other realms—vegetal, mineral, animal—and even to spaces themselves. Lucy Lippard, in her definition of land, adopts an Indigenous perspective that includes not only visible elements but also "the living force of each rock, blade of grass, small animal, or weather change.(...) all of these parts (human beings merely one of them) are linked within the whole" (Lippard, 1997, p. 14). Karen Armstrong (2022), in her reflection about the importance of recovering our connection with the natural world, recalls the concept of mystical participation proposed by Lévy-Bruhl, referring to the worldview of Indigenous peoples who experience not only humans and animals but also seemingly inanimate objects—such as stones and plants—as possessing their own life force, each participating in the same mode of existence and influencing one another. There is no separation between these entities; all share a common, immanent essence, each a reservoir of vitality (Bruhl, 1995). In a participatory project, the Earth itself—as a living and evolving entity (Vaughan-Lee, 2013)—also participates.

Objects and spaces

The experiential and connective dimensions of participatory artistic processes have been emphasized. Even when a process includes or culminates in the creation of artistic objects, the way in which the works are made is more relevant than the works themselves (Stott, 2015). Even so, it is useful to be aware that, in the creation and production of sculptures, there are intense experiences on an individual and collective level, even if apparently no extroverted or visible dynamics are taking place. The "interior and silent" act of creating a collective sculpture (Fróis, 2007, p. 90) can ignite a connection between people and give them a voice, opening up a space for expression through modeling. Moments of creating an artistic object are spaces for improving the self; we model and are also being modeled (Kelly, 2015). Providing spaces that encourage the development of people's inner resources, such as the ability to create something with their own hands, is an act that is simultaneously political, poetic and spiritual - power, wonder and presence can go hand in hand. Creating a form in a contemplative and meditative way has an individual and collective inner impact (Franklin, 2017; Inácio, 2021, 2022). The conection with raw materials, the shaping of forms, sculptures or objects brought by the participants are also part of the projects. Perhaps we

should not forget nor neglect what ancient stories and legends, ancient practices such as feng shui or the latest scientific research reveal about the power that objects can have[6].   The "vitality" that animates the whole "universe" can also be contained in a sculpture (Andresen, 2021, p. 473). The Greek legend of Theagen illustrates the power that a sculpture exerts over people and cities.

In Eastern traditions, there is the concept of energy (chi, prana, etc.) circulating in all beings (visible and invisible), objects and spaces. In feng shui, a practice from ancient China, each object is seen as having a specific kind of energy that can, according to their shapes, materials and their placement in the space, have an impact on environments, spaces and beings. Regarding the ancient art of feng shui, Lucy Lippard points out that it is a "spiritual approach" to places, the dimension that refers to the "invisible world" (Lippard, 1997, p. 15). The art critic and feminist activist highlights how artists, in the light of this ancient wisdom, "can guide us through kinesthetic responses to topography, lead us from archaeology and land-based social history into alternative relationships to place" (Lippard, 199, p. 19). The author also mentions that walking is a form of meditation that can connect us to the "spirit of the place" (Lippard, 199, p. 17)[7].

Subtle dimensions of reality

The subtle or energetic dimension of reality, which some authors call the spiritual dimension and in which there is currently growing interest, has always been explored by the wisdom traditions of humanity. It is a complex subject and difficult to approach in academic contexts[8]. The philosopher Ken Wilber (2005) approaches the subject of subtle energies in the light of the great spiritual traditions and modern science. He establishes links between the *Great Chain of Being*, with origins in Greek philosophy, in which the universe and existence are divided into different levels or hierarchies: matter, body, mind, soul and spirit, with the theory of the *five koshas*, with origins in the Vedanta tradition, in

6 The author Yoshifumi Miyazaki (2018) has carried out scientific studies proving that contact with and handling of certain natural materials (clay, wood, etc.), as well as conscious contact with nature, calms the nervous system and is a source of health and well-being. At ExperimentaDesign in 2001, António Damásio discussed how the design of the objects around us has an impact on our brains and influences our states and emotions.

7 Walking as a spiritual practice is addressed by the zen meditation teacher Thich Nhat Hanh (2011).

8 Lucy Lippard affirms: "the spiritual component, situated for many people between nature and culture, and rarely acknowledged by scholars as a factor in contemporary life, is doubly difficult to incorporate into the current debates. It is still more difficult to define the way the word spiritual is used today (...). I understand the spiritual as a way of living the ordinary while sensing the extraordinary" (Lippard, 1997, p. 14).

which the Being is made up of various layers, from the densest and most material to the most subtle and spiritual. In Tantric traditions, the human being, beyond its visible dimension, is made up of a subtle body and chakras. Seven main chakras are located in the subtle body, aligned along the spine - psychoenergetic centers that are "reservoirs of vital energy" related to specific psychosomatic functions (Feuerstein, 2001, p. 353). In the tradition of Tibetan Buddhism, the origin of all that exists is the great primordial void and this space, which contains infinite possibilities in potency, is expressed and manifested through the five energies (Berliner, 1999; Rokwell, 2002; Borges, 2022). Any object, being, place, work of art or situation is an expression and dynamic between these energies (space, water, earth, fire and air). The artist Joseph Beuys, in hist notion of *social sculpture*, highlighted the invisible materials – thought, speech and mind; and energy played an important role in his artistic creations.

In light of the above, we present table 1, which summarizes one perspective of the different participants that can exist in a participatory art project, such as human beings, non human beings, spaces, objects, Earth as well as their visible and invisible layers.

In short, beings, objects, spaces, the planet, beyond its visible dimension, are reservoirs of energy, they have an impact, they participate.

Three sculpture projects with the community

All living Earth!; Air of the Stars; and Being Stream

A holistic vision inspired by different wisdom traditions, in which spirituality and creativity are intertwined can be present when we design and implement projects involving communities, fostering innovative innovative and transformative approaches for facing social challenges[9]. Bearing in mind the balance between external action and internal balance (inner sustainability)[10] we can create, for examples, exercises and dynamics that will activate certain chakras or energies and, in that way, we know that certain capacities and inner resources of the participants will be stimulated and harmonized. Through the practices proposed in sculpture projects with community, several abilities in

9 The renowned meditation teacher and artist Chogyam Trungpa, in the decade of 1974, started to develop this connection in the Naropa University. The contemporary artist and social sculptress Suiko McCall, with her Art Monastery Project, develops projects with community that merge art with spiritual practices.

10 The latest research into inner sustainability (or personal sustainability) takes into account the subtle dimensions, spirituality, a sense of purpose, the connection between human beings and nature and argues that sustainability at a global level depends on awareness and recognition of the importance of these subtle dimensions (Tamm & Parodi, 2019).

Participatory agents	Visible layers of participation	Invisible layers of participation
Human beings (people who support and conceive the project and people invited to participate)	Physical bodies	Emotions, thoughts, motivations, aspirations, worldviews, speech; Subtle energies of the body; invisible layers that are named in different ways according to several spiritual wisdom traditions
Non-human beings	Mineral, vegetal and animal kingdoms (stones, trees, plants, watercourses, animals, etc.)	Subtle energies of beings; Invisible beings (unseen entities that have different names in different spiritual wisdom traditions).
Spaces	Countries, cities, natural world, institutions, rooms	Subtle energies of the spaces
Objects (objects used in the sessions and objects created together)	Shapes, Materials, Textures, Colours	Contents and concepts associated with the objects (of books or sculptures for example; Subtle energies (space, water, earth, fire, air)
Earth	Living planet	Planet as a living entity in an evolving process; Subtle energies (space, water, earth, fire, air)

Table 1 – Different types of participants in a participatory art project and their visible and invisible layers.

participants can be developed such as: imagining and creating; training the ability to direct our attention both inwards and towards an external object of contemplation; being aware of the present moment, valuing and appreciating simple things as walking, breathing, simply being; expanding feelings of belonging, gratitude and wellbeing; restoring the deep kinship with ourselves, other beings, Nature and Earth; reflecting and sharing about the creative process and deeply listening the others; sensing the energy of the body and spaces, etc.

All Living Earth! (Todos Terra Viva!) (2024/2025)

Over the course of twenty sessions, a model for the co-creation of a sculpture for Catujal Park was put into practice with a 4th grade class from Escola Básica de Unhos (Loures). The methodology used included a variety of artistic languages (drawing, sculpture, ephemeral interventions in the landscape) in a contemplative, meditative and reflective approach. In the first stage we focused on Knowing and connecting with ourselves and

the space, with exercises like drawing the flowers, breathing and walking consciously through the space, modeling clay from the connection with trees, getting to know the stories of the place. In the second part we created small clay brick sculptures, like three-dimensional tests for a sculpture for the park – these shapes emerged from the resonance with the energies of SPACE, WATER, EARTH, FIRE and AIR (Figure 1).

The model of the clay sculpture made for the Catujal urban park (Figure 2), which was presented to the city's population at an exhibition in the Municipal Galery Vieira da Silva, is the visible part of the whole process - it materializes the immersive experiences, the exploration of infinite possibilities, the connection with the natural world, the spirit of joy and discovery present in the group[11].

The following two tables show two perspectives on how some of the exercises and dynamics proposed in the *All Living Earth!* project had the potential to activate and harmonize each of the five energies (Table 2) or each chakra (Table 3).

Air of the Stars (Ar dos Astros)

It's an ongoing sculpture project with the community, since July 2024, with an intimate dimension, in which I hold sessions that merge sculpture and astrology. Each session, held in gardens or forests, has two stages: in the first part, I read the person's astrological chart and in the second stage, I guide them through the process of creating a small clay sculpture, inspired by the most significant and impactful aspects mentioned in the chart reading, so that in the future she can reconnect with the message or vibration that she imbued the object with when she modeled it (Figures 3 and 4). We begin with a meditative moment in which, by focusing on certain aspects (such as breathing, the weight of the body on the seat) there is an invitation to become firmly rooted in the present moment and receptive to the intuitive and symbolic language that is astrology[12]. Some people pointed out that the fact that they had modelled the shape made the process of understanding what had been said more concrete. These processes have the potential to be transformative moments because they bring an increase in self-knowledge and awareness of various issues for both, me and the participants.

11 In the moment of writing this text the sculpture is still in the process of being constructed in Catujal Park. For future updatings you can consult our website: https://www.sarainacio.pt/trabalho/escultura-com-a-comunidade (check the project Todos Terra Viva! (All Living Earth)).

12 Astrology is a symbolic and intuitive language that allows us to become aware of our main inner resources; to become clearer about what we need to transform in order to express our full potential; to understand the main challenges and opportunities of the present moment, in all areas of life; tuning in to our deepest purpose, in harmony with cosmic cycles and rhythms.

Energyes	Associated qualities	Project *All Living Earth!* (exercises to activate and harmonize each energy)
Space	Primordial matrix of everything; the emptiness from which all forms emerge. Our deep being, our home, the essence; our inner space, but also all the outer space.	Exercises to connect with the experience of being, of simply being present. Meditative exercises to observe our inner home, feel the space inside and outside of us.
Water	Associated with the ability to see and reflect things as they are, without distorting them with limited perceptions. Wisdom, reflection, awareness.	To know stories about the territory, to know properties of the plants, to know the five energies. Observe and draw what we see with the maximum awareness.
Earth	Feeling of abundance. Being able to enjoy all of life's experiences and recognizing its richness. Concreteness of things; fertility, stability, security.	Walk consciously feeling the ground, the Earth. Exercise of modeling reliefs from the connection with the olive trees. Sensing the abundance of forms, colours and smells and connecting with plants and flowers through drawing them.
Fire	Love, warmth, passion, compassion. Potential to connect with others and with the world.	Creating a collective sculpture related to the element fire - each one impregnating a piece with the warmth of their hands and with the love and care that radiated from their heart.
Air	Movement, action, creativity, spontaneity, imagination.	Free and spontaneous creation. Creating sculptures related to the 5 elements/energies exploring the diversity of responses. Drawing exercise (imagining ways of representing the elements in our body).

Table 2 – Exercises carried out in the *All Living Earth!* project and how they can activate and harmonize the qualities associated with the five energies of wisdom.

Being Stream (2022/2023)

This project consisted in a immersive workshop that merged visual arts end ecology (in a deep sense), where the Torregela stream, in Évora (Portugal) was the central being[13]. It included sensory experiences,

13 The first part of the project (2022), which we cover in this text, was created in co-authorship with the ecologist and university teacher Maria Ilhéu and had the participation of a group of artists, teachers and students of Évora.

Figures 1 and 2 – *All living Earth* project (Sara Inácio, 2024).

Figures 3 and 4 – *Air of the Stars* project (Sara Inácio, 2024).

Figures 5 and 6 – *Being Stream* project (Sara Inácio, 2022).

Chakras	Associated qualities	Project All Living Earth! (exercises to activate and harmonize each chakra)
Sahasrara Chakra (crown chakra)	Connection with the universe, sense of oneness, universal wisdom	Meditative and reflective exercises where we feel unity with nature and all of life; Collective reading of inspiring texts (sensation that the whole is greater than the parts).
Ajna Chakra (third eye chakra)	Intuition; Mental clarity; Inner vision; Focus	Exercises where we turn inward our attention; Exercises that activate the perception beyond the visible: imagine roots of the trees and model them with clay; visualization exercise of life flowing through us, plants, trees.
Vishuddha Chakra (throat chakra)	Resonance with symbols; Truth, communication; Authentic expression	Exercises of creating forms from the ressonance with the five energies; Moments of sharing at the end of creations (each one communicates its truth); Exercise of creative writting (To be a tree is...).
Anahata Chakra (heart chakra)	Love, empathy, compassion, gratitude	Group creation exercises - enhance being in relationship, deep listening and sharing, connection; Exercise related with fire element – create from intention and radiate love for the collective work; Create reliefs based on the connection with olive trees; Feeling gratitude, in the end of sessions, for all that was experienced.
Manipura Chakra (solar plexus chakra)	Assertiveness; Capacity for action, determination	Moments of oral sharing about created models - strengthen determination and assertiveness; Igniting self confidence to expose oneself to others while sharing.
Svadhisthana Chakra (sacral chakra)	Creativity, pleasure, fluidity	Feeling the pleasure of sensory experiences: breathing, seeing shapes and colors, feeling the wind on the skin, etc; Having the experience of creating freely.
Muladhara Chakra (root chakra)	Grounding, security, stability, physical body	Connecting to the body and breathing, walking consciously, reconnecting to the Earth; Ephemeral artistic works with the materials of the land: identifyng the four directions and creating a circle with stones; Drawing from the observation of plants and flowers, learning stories about the territory.

Table 3 – Proposals and exercises carried out in the participatory project "All living Earth!" and how they can activate and harmonize the qualities associated with the seven chakras.

sharing knowledge about the stream and its current state of fragility, moments of contemplation and silence, in which we walked along the banks and listened to the river, and visual arts exercises. The approach to the stream through the visual arts began with a sequence of drawing exercises designed and oriented in such a way as to direct attention from the outside to the inside: from the external landscape, with solid, visible and tangible

elements, to the interior space, to sensory, intimate, reflective experiences, such as the experience of being a stream (Figure 5) – like in a contemplative practice, where there is no longer any separation between subject and object and the experience of non-duality prevails. From the lines drawn, students created reliefs in clay, each relief being a part of a larger whole. The reliefs were installed by the students in the land near the stream – a sculptural ephemeral installation (Figure 6). In this project we emphasized three important aspects of the practice of sculpture: the creation of forms through manual modelling, the relationship of forms with the surrounding space and the natural world, and sculpture as a space of encounter and co-creation (social sculpture) in which, rather than creating forms in clay, we were shaping possibilities of existing in connection, in unity – like one student wrote: "...above all, being stream is the union between all of us, physically, emotionally, spiritually". This workshop has been a celebration of the network of life to which we all belong (human and non-human, visible and invisible).

Conclusions

From our perspective, *Sculpture with Community* defines a set of practices aimed at activating and harmonizing the various dimensions (from the densest to the most subtle, visible and invisible) of beings, places and the Earth. These practices include moments of creation with a variety of languages (drawing, sculpture, ephemeral creations in the landscape, etc.), reflective and meditative/contemplative moments. Artistic practice becomes a spiritual practice because it allows us to expand our perception to ever more subtle levels of reality. In this way, we recognize that everything has a presence (beings, objects, places, the planet), everything manifests and is part of a vast web of relationships and, above all, we are all participated in by the flow of Life's own energy. In this way, participatory art projects have the potential to hold space so that the inner capacities of the participants can be enhanced - the ability to direct our attention, active sharing and listening, connection with natural world, imagination and creativity – all of them are essential skills to a more humane, awake, sensitive and active way of being in this current time.

REFERENCES

Andresen, S. de M. B. (2021). O nú na antiguidade clássica. In *Prosa* (pp. 437-492). Assírio & Alvim.

Armstrong, K. (2022). *Natureza Sagrada: recuperar o nosso vínculo com o mundo natural*. Temas e Debates.

Berliner, H. (1999). *Enlightened by design: using contemplative wisdom to bring peace, wealth, warmth & energy into your home*. Shambhala.

Bishop, C. (2012). *Artificial Hells: Participatory art and the politic of spectatorship*. Verso.

Borges, P. (2022). *Presença plena: uma viagem meditativa, terapêutica e filosófica pelas cinco energias da vida*. Farol.

Feuerstein, G. (2001). *The yoga tradition: Its history, literature, philosophy and practice*. Hohm Press.

Lévy-Bruhl, L. (1985). *How natives think*. Princeton University Press.

Franklin, M. A. (2017). *Art as contemplative practice: expressive pathways to the Self*. Suny Press.

Fortuna, P. & Fróis, V. (Eds.) (2021). *Os Processos Participativos e a Cerâmica*. VICARTE/FBAUL.

Fróis, V. (2007). Estar ou ser margem. In S. A. Matos (Ed.), *Margens* (pp. 87-91). Oficinas do Convento.

Gablik, S. (1995). Connective aesthetics: Art after individualism. In S. Lacy (Ed.), *Mapping the terrain: New genre public art* (pp. 74–87). Bay Press.

Inácio, S. (2020). Escultura e sustentabilidade: a dimensão interna. *Cadernos de arte pública*, vol.2, n.1, 120-131. doi: 10.48619/cap. v2i1.357

Inácio, S. (2021). Silêncio, contemplação e vazio na prática da escultura. *RIACT*, 2, 82-116.

Inácio, S. (2022). Sustentar a Chama [escultura e sustentabilidade interior]: modelar possibilidades de conexão. In Neves, P. S. ; Vicente, S. (Eds.).*CAP – Cadernos de Arte Pública*.

Kelly, V. (2015). To see, to know, to shape, to show: The path of an indigenous artist. In Susan Walsh, S.; Bickel, B. & Leggo, C. (Eds.), *Arts-based and contemplative practices in research and teaching: Honoring presence* (pp. 45-55). Routledge.

Lacy, S. (Ed.) (1995). *Mapping the terrain: New genre public art*. Bay Press.

Lacy, S. (2004). Having it good: Reflections on engaged art and engaged buddhism. In Baas, J.; Jacob, M. J. (Eds) (pp. 97-121). *Buddha mind in contemporary art*. University of California Press.

Lacy, S.(2010). *Leaving art: Writings on performance, politics, and publics, 1974-2007*. Duke University Press.

Lévy-Bruhl, L. (1985). *How natives think*. Princeton University Press.

Lippard, L. R. (1997). *The lure of the local: Senses os place in a multicentered society*. The New Press.

Macy, J., & Brown, M. (2014). *Coming back to life: The updated guide to the work that reconnects*. New Society Publishers.

Miyazaki, Y. (2018). *Shinrin-Yoku: A terapia japonesa dos banhos de floresta que*

melhora a sua saúde e bem-estar. Albatroz.

Nhat Hanh, T. (2011). *The long road turns to joy: A guide to walking meditation*. Parallax Press.

Nhat Hanh, T. (2017). *The art of living: Peace and freedom in the here and now*. HarperOne.

Ribeiro, A. P. (2015). Prefácio. In H. Cruz, *Arte e comunidade*. Fundação Calouste Gulbenkian.

Rockwell, I. (2002). *The five wisdom energies: a buddhist way of understanding personalities, emotions and relationships*. Shambhala.

Sacks, S. (2019). Sustainability without the I–sense is nonsense: inner "technologies" for a viable future and inner dimension of sustainability. In Tamm, K.; Parodi, O. (Eds.), *Personal Sustainability: Exploring the far side of sustainable development* (pp. 253-277). Routledge.

Tamm, K.; Parodi, O. (Eds.) (2019). *Personal Sustainability: Exploring the far side of sustainable development*. Routledge.

Vaughan-Lee, L. (Ed.), *Spiritual ecology: the cry of the Earth*. The Golden Sufi Center.

Wilber, K. (2005). *Toward a comprehensive theory of subtle energies. Explore*, 1(4), 252-270. https://doi.org/10.1016/j.explore.2005.04.016

Reimagining community through living assemblage
The Nova SBE community garden

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ABSTRACT

In this paper, we draw on Deleuze and Guattari's concept of assemblage (1987) as well as the concepts of intentional adaptation (brown, 2017) and affordance (Gibson, 1986) to reflect on the practices enacted in designing and nurturing the Community Garden@ Nova SBE, which emerges at the intersection of university development and local community dynamics. Initiated by the DESIS Lab @Nova SBE and supported by the Municipality of Cascais, the Community Garden @Nova SBE is a living and evolving system within an urban context that transforms an unused plot of land into a vibrant place where people, nature and activities interact and continuously reshape each other. The Community Garden is a complex and dynamic whole, composed of nature, artifacts (beds, tools, etc.) and different human communities. It serves as a living canvas where experimentation, adaptation, and learning happen continuously. This dynamic process, in which we see ourselves as facilitators, invites participants to take ownership, allowing the garden to grow organically and sustainably. This paper reflects on our practice in tending the garden and letting it grow through a circular process, which we conceived as involving three intertwined phases – inviting, listening, and stepping back. The Community Garden illustrates the value of engaging different stakeholders in a creative collaboration to reimagine how to inhabit unused spaces and co-create, with nature and with each other, an environment that nurtures both ecological and social relationships.

Introduction

Community gardens have become increasingly popular to tackle social and environmental issues: from improving health to promoting ecological practices and building social ties (Glatron & Granchamp, 2018). Recently, there has been a growing interest in implementing community gardens in universities to provide students with access to greenery, outdoors activities and exposure to sustainable practices (Byrne et al., 2020). They also have the potential to become spaces where students and residents interact while also coming in closer contact with nature.

Community gardens, as socio-ecological systems connecting nature with various human communities as well as physical artifacts (access ramp, tools, etc.) can be conceived as what Deleuze and Guattari (1987) define as assemblages. While assemblages mostly describe existing systems, this paper explores how we can design an assemblage. Yet, designing an assemblage is an oxymoron because it assumes some planning in opposition to the emergent nature of assemblage. With this tension in mind, we reflect on our experience of creating a university community garden and propose a circular process to design for emergence and create the conditions for a living assemblage to grow. This process involves three intertwined practices – inviting, listening and stepping back – where each practice informs and enriches the others. We highlight the importance of fluid, adaptive systems and show how community gardens can be platforms for collaboration and social impact. We propose the concept of a "living assemblage" as a way to shift from top-down design to a more organic, participatory approach when designing for emergence in urban spaces.

Theoretical framework

Assemblages and natural systems

Deleuze and Guattari's concept of assemblage represents a system where various elements, both human and non-human, come together in a dynamic interplay without predetermined roles or hierarchical structures. It allows us to understand how different elements can dynamically interact and create meaning. Deleuze and Guattari's concept of assemblage is inspired by natural ecosystems as illustrated by their use of the rhizome metaphor. The rhizome is a type of root system that grows horizontally and can sprout in any direction, and it serves as a symbolic representation of how assemblages develop and evolve through multiple connections rather than through a central controlling point. Deleuze and Guattari's conceptualization can help us analyze our community garden as a socio-ecological system or living assemblage, where human activity is intertwined with and deeply

connected to the broader natural world. Yet, its rebutting of any form of control and top-down process invites us to analyze our practice and role in creating and tending the garden.

Designing for emergence

While assemblage, with its inspiration in nature, is relevant to conceptualizing our Community Garden, it does not provide directions on how assemblages emerge and how they might be nurtured. Here the work of the social activist adrienne maree brown (2017) is pertinent to our practice because of its inspiration in nature and its focus on creating the conditions for emergence and change. Brown's concept of intentional adaptation offers valuable insights into how small-scale, localized, and iterative actions can accumulate to create systemic change. It aligns closely with assemblage's emphasis on bottom-up emergence while adding a practical dimension to fostering transformation. Central to brown's framework is the idea that change depends on context, and that we must pay close attention to how the physical and cultural environments affect the conditions for transformation.

Gibson's (1986) notion of affordances is a useful complement when thinking about designing environments like urban gardens. Gibson argues that we don't perceive objects or environments as a set of material properties, but we perceive their affordances, i.e. the possibilities for action. We take a relational view on affordances that allows us to conceptualize the relationship between actor and environment as an interpretative act (Fayard and Weeks, 2014). Affordances vary depending on the situation and the individual's culture, needs, and abilities. For example, the ramp we built in the Community Garden not only allows access to the space but has also been used as a slide for a toddler and as a meeting point where a table was set for a shared meal. These uses highlight how physical elements enable multiple interpretations and actions, shaped by the needs and perspectives of those interacting with them. It also points to the fact that what we design might be ignored or misinterpreted, reminding us that our designs are never finished.

While coming from very different intellectual traditions and disciplinary fields, Gibson's notion of affordance and brown's notion of intentional adaptation both emphasize how carefully designed physical spaces can foster specific actions and connections while remaining open to unexpected interactions. They remind us that while we cannot directly design emergence, we can thoughtfully create conditions that invite and support it. In this paper, we discuss the Community Garden as an assemblage, where physical elements and social interactions are carefully designed to encourage emergence and connection, creating a space that evolves organically over time.

The Nova SBE community garden

Evolution and implementation

The Nova SBE Community Garden is situated in Carcavelos, Cascais, a suburban area undergoing rapid urbanization. While fostering economic growth and infrastructural development, this transformation has also amplified challenges such as social inequality and mobility issues. As part of the larger Cascais municipality, Carcavelos embodies a dual narrative: one of opportunity through expansion, yet also of complexity in balancing growth with local needs. The Nova SBE campus, completed in 2018, stands as a symbol of this transformation. Designed with the goal to be integrated within the local community, the campus' presence has nonetheless reshaped the surrounding dynamics. In particular, the Quinta de São Gonçalo neighborhood has benefited from increased activity and accessibility but also faced disruptions that highlight the delicate balance between urban development and the preservation of local culture and ways of living.

The idea of a community garden emerged in Spring 2022 as a students' project at Nova SBE. At this early stage, the idea did not specifically target social inequalities. Instead, it sought to bring greenery to the campus and explore outdoor gardening to enhance the university's commitment to sustainability. Though the idea sparked interest, its first iteration faltered. A small plot was designated for prototyping, but due to various challenges, the project stopped.

When the DESIS Lab @Nova SBE revisited the idea, a larger plot of land was identified that was imagined as a living space that could bridge diverse groups—students, faculty, staff, and residents. This shift marked a transformation from a simple gardening initiative to a broader vision of creating spaces that foster well-being and connections across communities. The garden was a space not only for cultivating the earth, but also relationships. In fall 2023, a master's student explored the community's needs and aspirations in her thesis. Through interactive design research, interviews with residents, students, and faculty, and rapid prototyping of activities, she found that the garden could serve as a connector for meaningful community exchanges.

This process marked the transition from idea to action, with the DESIS Lab assuming project leadership in collaboration with a partner consultant since 2024. First, we focused on exploring the needs and interests of the surrounding communities. Insights from co-creation workshops, alongside activities such as yoga sessions and gardening with local schoolchildren, informed the design of an interactive program aimed to foster engagement. In the Fall of 2024, the program included diverse engagement touchpoints, from hands-on gardening

to cultural celebrations and educational workshops. For instance, in October 2024, a collaborative event with Forest Impact blended wellness (yoga), environmental stewardship (Miawaki Forest cleaning), and community building (treasure hunt and picnic). This created multiple entry points for people to find their own connections with the space. A key moment was the Winter Solstice celebration in December 2024, where participants planted new guilds, shared homemade food and created personalized wooden plaques that stayed in the garden as a token. Each plaque, inscribed with a name and message, symbolized a shared connection with the space and with one another.

Tending the garden and letting grow

At the core of this project, there is a tension between our attempt to design (i.e. to create the conditions for) and our desire to be non-intrusive (i.e. to let things emerge). On the one hand, we are tending the garden as we try to create a living assemblage by bringing together a physical space composed of non-human elements – living (grass, plants, etc.) and material (a ramp, sitting areas, etc.) – and various human groups with the intention to trigger new behaviors and social interactions. On the other hand, we want to let it grow. We do not want to become the "leaders" - decision makers and implementers, who control and impose certain paths. However, as the project evolved, we also realized that we needed to be engaged on the ground, get our hands dirty, to allow the community garden to become something more than "an idea that everyone likes".

As we reflected on our work, three Intertwined practices surfaced: inviting, listening and stepping back. Each of these practices informed our work at several levels: both when designing the overall program, and when designing each activity. While we discuss these practices independently for analytic convenience, in practice, they do not operate independently. On the contrary, they overlap and interact in supporting the nurturing to the living assemblage. Although they might appear sequential at first glance, these practices are deeply intertwined, as illustrated in Figure 1, where each practice branches out and flows into the others, creating pathways both within the garden's activities and with the broader environment that surrounds and shapes interactions.

Inviting

Inviting is about creating opportunities for both human and non-human elements to enter in and interact with the system, while also recognizing that participants can choose to not interact. It's the act of making space for new participants, materials, and ideas to emerge. This can be seen as an intentional act of bringing together diverse elements to spark new
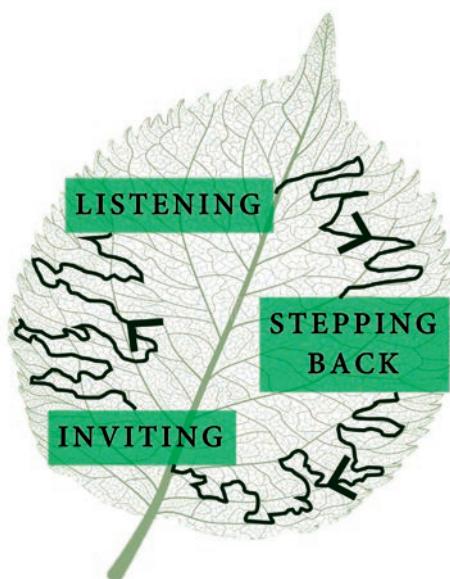
Figure 1 – The intertwined practices of nurturing a community garden, symbolized by a leaf's organic branching patterns.

interactions and collaborations. The practice of inviting affords growth (i.e. the expansion of the garden as a natural and social system) thus contributing to an evolving and transformative system.

At the program level, inviting means thinking about creating opportunities that resonate with different groups and make sense within their context. It's about designing programs that are accessible, relevant, and open to a wide range of participants (see Figure 2). For example, our open call for volunteers attracted many students who were passionate about green spaces to join the project. At the activity level, inviting is more immediate and tangible. It starts by involving design events where diverse elements (people, plants, tools...) can come together to create new interactions. The physical space itself also plays a role in affording participation, with features such as ramps and seating areas designed to encourage social connections and accessibility.

Listening

Listening is a dynamic process of attuning ourselves to the different elements of the system through our different senses. This means not only hearing but also seeing and feeling what's happening around us Through this sensory connection to the environment, we aim to better understand what the plants, the soil, and the garden ecosystem need to thrive. Figure 3 shows various activities that

Figure 2 – Community-driven activities (play, planting, and exploration) that invite diverse participants into the garden ecosystem.

Figure 3 – Practices of Listening and Sensory Engagement. Through observation, nature walks and plants identification, yoga, and stillness for storytelling, participants connect with the environment and one another.

foster a deeper understanding of the garden's rhythms and needs, informing responsive and adaptive design. We also pay attention to human participants through their verbal feedback and non-verbal cues, adapting and evolving the project to serve both the garden's health and the community's needs.

At the program level, listening is an ongoing practice of seeking input from the community through surveys, interviews, and informal conversations. Observing how different groups engage with the space helps us refine the broader design of the program, ensuring that our initiatives remain aligned with the needs and interests of the participants. This practice extends to the other living elements of the garden, allowing us to find a balance that meets the needs of the non-human species inhabiting the space and to invite new elements even.

At the activity level, listening goes beyond verbal feedback. It includes paying attention to the physical environment and how materials interact with both the space and the participants. For example, if a plant is not yet ready to be planted, we adjust the activity accordingly. Similarly, if participants provide feedback on a particular method or tool, we adapt the process to better suit their needs and the environment.

Stepping back

Stepping back is a central, yet paradoxical practice in tending the garden: it involves giving space for the garden to evolve naturally, while still providing some level of guidance. This process focuses on allowing new ideas, relationships, and possibilities to emerge. After inviting participants and listening to their needs and wishes, stepping back means allowing them to take an active role in shaping the garden's growth, trusting the system to develop on its own terms, and relinquishing control.

At the program level, stepping back initially involved encouraging students to share their early ideas. We offered a small garden plot to a group of students interested in planting, but little progress was made despite students expressing an interest in creating a green space. We realized we needed to engage more actively and therefore invited Johanna Pfeffer, a student interested in university community garden, to take the lead. Hence, Johanna dedicated her Master's thesis to the development of a first blueprint for the garden's programming and governance. After Johanna's graduation, it became clear that the garden was still in its early stages and required more structured coordination. We therefore decided to take a more active role in facilitating the garden's next steps while looking for ways to engage participants in the program's next phase. Inspired by brown's emphasis on small-scale, localized actions, we continue working at the activity level to inspire program-level engagement.

At the activity level, stepping back seems easier as participants have accepted our invitation. It still requires listening: a person who seems particularly keen to engage or has a specific question ("could we do …?") becomes an invitation for us to step back. During workshops or planting activities, we step aside and allow participants to take ownership. By

Figure 4 – Making Space for Emergence: Co-Creation and Student-Led Exploration. Moments where community garden volunteers and participants took initiative: brainstorming about the first structures that should be built in the space, bringing the project to be discussed and iterated in a Design Jam or previous volunteers teaching others how to plant guilds.

creating space for them to lead, we give them the opportunity to shape the project in ways that feel more meaningful and personal. It also creates a safe space for experimentation where success and failure coexist in a positive way.

The three practices – inviting, listening and stepping back – work together to create the conditions for a living assemblage to grow and thrive. By listening to the environment that shapes our garden, we invite new supportive elements that offer fresh insights, which in turn create the space to step back and allow new voices and components to emerge and contribute. Simultaneously, stepping back creates opportunities for renewed invitations, as participants took ownership and new possibilities arose. The three practices connect in a fluid and overlapping way: Each informs and enriches the others, ensuring the system remains dynamic, responsive, and purposeful. This iterative interplay between inviting, listening, and stepping back reflects the essence of what we conceive as a living assemblage.

Connecting theory and practice

Reflections on the living assemblage

For Deleuze and Guattari (1987), an assemblage is a network made up of different elements (people, objects, ideas, and actions) that come together and interact for a purpose. Similarly, in a collage in art various materials such as paper, fabric, or photos, are arranged to form a whole. The strength of an assemblage lies in how these diverse components form fluid, evolving relationships, adapting and

shifting in response to each other, creating a system that doesn't have a pre-defined fixed structure and transforms according to its elements relationships. The beauty of an assemblage is its flexibility: it can change as its parts shift and grow. But what if we viewed an assemblage as more than a flexible network; as something that organically grows, evolves, and adapts through intentional interactions?

This is what we're exploring with the concept of a "living assemblage" in the context of a community garden. Imagine a performance where the actors and the audience engage in a constant exchange creating a dynamic system that evolves in response to the needs, desires and challenges of both the actors and the audience. Similarly, the garden transforms and creates new ways for people to engage and grow together, much like how a performance shifts through the unique interactions enacted in each show.

A living assemblage adds an essential layer of intentionality to the concept of assemblage, while refusing a controlling view of design. Just as the gardener can never predict exactly how the plant will grow or how much effort will be needed each time, they remain flexible, adapting, by listening, to how the plant shifts and changes. The living assemblage reflects this same dynamic of purposeful interactions balanced with the unpredictability of growth. The "living" aspect reflects how the system grows over time, in reaction to external pressures as well as through intentional actions and emergent behaviors and interactions from within. Intentional adaptation and affordance work together in a living assemblage and in this case, in our Community Garden. As participants interact with the garden, they reshape it, which in turn creates new possibilities for action. As emergent interactions take place, new affordances and adaptations emerge, leading to unanticipated opportunities for action and engagement. The result is a community garden that becomes a living, evolving system that is dynamic, flexible and purposeful.

The community garden illustrates how while we cannot design an assemblage because it will go against the principle of emergence (which, by definition, one cannot design), we can design for emergence – design

an environment that affords emergence. Designing for emergence within a living assemblage requires a delicate balance between inviting, listening, and stepping back. As highlighted earlier, the practices we describe are all interconnected, and one can enter the circular process at any point. Hence, one does not need to start by inviting. One in fact might start by listening or even stepping back. The original idea came from listening to the first student project, and this led us to invite a student to explore what a community garden might look like. We then stepped back, while supporting her when needed, to allow her to explore freely. Recently, a student studying urban beekeeping for pollination expressed interest in using the Community Garden as experimental ground. This illustrates how stepping back can become an invitation that creates a space affording personal growth and exploration. Regardless of whether the integration of bees into our urban garden proves viable, the idea has already introduced new knowledge and interactions that contribute to the system's evolution. This circular process recognizes the needs for intentional adaptation (brown, 2017) instead of a linear process which predefines the start and the end.

Among the three practices, stepping back often proves to be the most challenging. While the intent is to create an organic space for new ideas and relationships, stepping back involves a persistent fear of failure. A fear that without our direct intervention, the system might weaken, stagnate, or even collapse, creating tension between guiding the system and allowing unpredictable evolution. The fear of stepping back also arises because of the unpredictability produced by the dynamics of a living assemblage. As Deleuze and Guattari suggest, an assemblage thrives on the fluid, evolving relationships among its elements, and a living assemblage amplifies this complexity by incorporating deliberate growth and adaptation. In practice, this means we need to renounce to some degree of control to allow participants to shape the system in ways that align with their vision. Such a renouncement involves a choice to trust the process of emergence and to see failure not as an endpoint but as a generative moment for learning and rethinking. As brown reminds us "organizing takes humility and selflessness and patience and rhythm" (2017, p159). Through our reflection, we came to see stepping back not as a withdrawal but as a dynamic process of cultivating affordances while recognizing that affordances might not be perceived or activated and maintaining the flexibility to adapt. Stepping back is intentional: not only an intention enacted on our end, but also an intention that must be interpreted and felt by participants as an invitation to take ownership and agency. The way we facilitate activities, therefore, becomes crucial in communicating this intention and ensuring that stepping back is recognized as a deliberate gesture of trust and encouragement. The paradoxical nature of stepping back echoes the

intrinsic duality of our role as both participants in the garden's daily life and facilitators of its ongoing evolution, with each aspect of our involvement enhancing the other.

Community gardens as living assemblages – places of connection and learning between different human actors (in our case university members and residents), artifacts and living organisms – invite us to engage in transformative and collaborative approaches to re-imagine our relationships to nature and each other.

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REFERENCES

Ball, J. W., Bice, M. R., Bickford, N., Bickford, S., Coughlin, A., Dinkel, D., Hollman, A., Meyer, R., & Ranglack, D. H. (2018). Community gardens: Interactions between communities, schools, and impact on students. *The Health Educator, 50*(1), 2–10.

Bell, S., Fox-Kaemper, R., Keshavarz, N., Benson, M., Caputo, S., Noori, S., & Voigt, A. (2016). *Urban allotment gardens in Europe*. Routledge. https://doi.org/10.4324/9781315686608

Bennett, J. (2009). *Vibrant matter: A political ecology of things*. Duke University Press.

brown, A. M. (2017). *Emergent strategies: Shaping change, changing worlds*. AK Press.

Byrne, J., Flies, E. J., Jones, P., Kendal, D., Koolhof, I. S., Mallick, S., Marsh, P., & Pearson, S. (2020). Trust, connection and equity: Can understanding context help to establish successful campus community gardens? *International Journal of Environmental Research and Public Health, 17*(20), 7476. https://doi.org/10.3390/ijerph17207476

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

Fayard, A. and Weeks, J. (2014) Affordances for Practice. *Information & Organization, 24*, 236-249. https://doi.org/10.1016/j.infoandorg.2014.10.001

Gibson, J. J. (1986). *The ecological approach to visual perception*. Psychology Press.

Glatron, S., & Granchamp, L. (Eds.). (2018). *The Urban Garden City: Shaping the City with Gardens Through History. Springer*. https://doi.org/10.1007/978-3-319-72733-2

Mesa Para o Cuidar

Reflections on human-discarded material assemblages trough a participatory sculpture project

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ABSTRACT

The object of this article is *Mesa Para o Cuidar* (*Table for Caring*, 2024), a participative sculpture project made from discarded objects provided by the Misericórdia parish council's urban hygiene centres over a period of one month carried out as part of the Misericordia's Future and Sustainability Artistic Residency. It shares a participatory project as a way to think together about how each one relates with discarded objects in the territory of a specific municipality for a glimpse of what could be the common good. Further, this article recognizes and reflects on the specificities of sculptural involvement with material-human assemblages in this project by recognizing what further roles discarded materialities and objects had in the co-creation of participatory sculpture processes. To do this, it elaborates on vibrant material theories to develop considerations about their agencies as more than human modes of participation. Trough the lenses of new materialisms it advocates for the consideration of social relations inherited and produced in intra-actions between unknown people that are a part of object's life cycles, artistic project participants and materiality. Thus, it reflects on the concepts of locality and trans-locality relating them with materiality's political agency and why they matter for participatory sculpture projects. Further, it shares reflections and insights on the role of the map in preventing unwanted material intra-actions in the context of capitalocene and advocates for the expansion of the concept of participation to include the concept of care as a mean for more *indirect* modes of social impact.

KEYWORDS

Participation, sculpture, new materialisms, upcycling

Introduction

Lines of research regarding participation in waste treatment sites have been focusing on specific infrastructures or social groups working inside them (Lithgow and Wall, 2019, Weintraub, 2007, p. 71, Gutberlet et al., 2017). Here we seek to involve participants to reflect on the relationship between found objects and the territory of a municipality which hide social issues in the relations between humans and *inert* matter such as discarded objects. This emerges in local, or trans-local assemblages such as municipalities or global industrial material life cycles and therefore, potentially, for our common good. Its expansion goes beyond a dichotomic and static view of nature that looks, understands and considers humans as individual, autonomous beings and discarded materialities as merely inert, instrumentalised things. It recognizes and highlights specific human-material assemblages composed by socialites between humans mediated by discarded materials, defying ideas of locality and community. Starting from a more specific municipal waste treatment department: the street cleaners, this article describes the exploration of a more fluid way of proceeding in participation in order to access and give the first steps toward participatory methodologies in artistic object making that consider materialities as participants. It rebalances focus by considering their pasts before artistic object making, going to their encounter and taking them to the encounter of other bodies, social groups and spaces, human or not, recognizing all as social and political interveners. In this way a series of actors which are usually taken for granted are considered as in constant movement and transformation. In this line of thought, we welcome with open arms the dwelling identity especially of objects and materials co-produced by humans in a world long globalised before the internet through the extraction, transportation, transformation, production, transaction, consumption and disposal of goods, matter and materials as a reference. By becoming aware of them, the project recognizes its involvement in the co-production of social relations between humans and non-humans and between humans that do not relate otherwise than through their contact whit specific objects or materialities. This highlights local and trans local assemblages: rhizomatic, dynamic, productive and connective set of events composed as well of entangled relationalities of inheritance (Barad, 2010, p. 264). Thus, we underline and amplify a specific assemblage that reside in the entanglements between matter, discarded objects, junk and rubbish collection, street cleaners, tourists, local residents, dwellers, the sculptor's studio, micro circular economy initiatives, gallery programmers, decision makers and more, advocating that all of them compose the social and that all of them matter (Barad, 2007, pp. 132-189).

Project description

Mesa Para o Cuidar was a participatory sculpture project developed in the artistic residency *Misericordia's Future and Sustainability* (2024) held in the Misericordia Parish Council in Lisbon, Portugal. This proposed the construction of a participatory sculpture, a tridimensional mental map that would reflect the invisible relations existent in that specific area between discarded objects, workers of the urban residues departments, residents, tourists and local consumers.

Firstly, with the help of the street cleaning teams, diverse discarded objects were collected. Having gathered and cleaned the materials picked up from the streets with the workers, a large and old travel suitcase, transportation pallets and wood agglomerate sheets were found on the way between the street cleanings and the studio. To great and joyful surprise, next to the studio provided for the residency, was even found a circular economy project for artists about to be launched by one of the residencies organizers which was already packing up the storage room even before the project was officially launched by the name Matéria (unknown author, n.d.). From the innumerable items existent, some were selected to add to the "collection" and be used on the next phase of the project. Then it was extended an invitation to the personal contacts provided by the street cleaning team members, posters were put up for the general public in a café indicated as a place frequented mainly by locals and in the place where the project would be carried out. It was even sent an invitation to be shared by the council's media, something that ended up not happening.

Every Saturday morning throughout July, the pallets were placed on the ground in a way that suggested they were an extension of the bio market held in the Príncipe Real Garden. A map of the parish council and two paper pads with the phrases "Collaborative Sculpture" and "How do the Objects we Discard Relate to Sustainability?" written in both Portuguese and English were placed on top of them. Beside these, an old suitcase was laid open. Inside, passers-by could find cables and pieces of computer hardware, spectacle frames, confetti launcher tubes, reusable and disposable plastic cups, soft drink and beer cans collected after Lisbon's Santos (Popular Festivities), along with tools to help transform the objects if necessary. To those who showed interest, the project was explained or discussed and then, if they wanted to engage in the making of the sculpture, place the objects alone, manipulated or assembled on the map using the materials and small tools in the case.

Different people engaged with the initial "sculpture prototype". More reserved individuals, who did not present or speak about themselves, simply selected and placed the object, relating it to the map without asking questions. Others, engaged in different ways in conversation, talking about how they got there, if they were residents, just going for a walk, going to shop in the bio market just next to us or if they were visiting

from other countries. Between the conversations and the contributions, some unexpected histories about objects that they found were shared. A nearby resident who had very recently found a tennis ball on the street and was carrying it with her, placed it near the location where she was living. Another man who helped to park cars in that area for coins also donated an object, this time an abandoned smartphone smashed by a passing car which he positioned on the map in the location where he works parking the cars. Other times, when the participants obviously didn't have any previous relation with the objects, they positioned them in specific locations that would remember them of such kinds of objects. One such case which happened with a woman who only spoke English, accompanied who was probably her boyfriend, which, after a small enquiry about the project, took one of the coups in the case and placed it in a crossroad where they had taken brunch with similar disposable cups (Figure 1). Another man, a Portuguese that lived nearby, placed a series of stacked disposable cups to signal a very crowded night area that was always left streets full of trash and alcohol on the floors by the night bar goers (Figure 2).

Other more joyful encounters happened with families (Figure 3). One of them was a Portuguese family that leaved nearby and whose father worked in the Parish Council. He placed a computer component in a location on the map which was the same size and shape, and the daughter made a "boat" from a computer component and a mobile charger. The other family was on holidays from a Spanish island and had three young boys. With great enthusiasm they made a "wind turbine" with a small computer fan and a confetti launcher tube, a "boat" with a computer plaque, half of a small snowboard google and a piece of fabric from a popular saint festivity's banner, and a Coca-Cola can made monster (Figure 4).

After the participatory sessions held during Jully, the contributions were photographed. They were then taken to the studio and transformed into a more definitive sculptural works. The pallets were dismantled, sanded and their tops were disposed as a canvas where a geometric figure known as the flower of life was drawn with Chinese ink. The map was then glued on top of it and incorporated in a shape constructed with the other parts of the pallets in order to resemble a table (Figure 5).

Once the *table* was assembled, bases were added to the objects-contributions made by the participants and their constituting elements attached in a more permanent way without jeopardising the original compositions.

Finally, the resulting work was exhibited at one of the galleries belonging to the residency's parish council called Espaço (Space) Santa Catarina from 3 to 17 of September. Invitations were sent out to the contacts provided by the street cleaners and decision-makers in the waste sector, and the date of the exhibition's opening was shared on the council's social networks. It was presented as an interactive sculpture, which extended the participation process throughout its stay in the exhibition space. During this, it was

also proposed that the sculpture could be permanently installed in the parish council's offices in order to create a space of radical transparency community's involvement the decision-making processes. In this way, the residency's Open-Call was met, which called for the creation of something that could be installed permanently. Although the idea was rejected by the decision-makers with no room for dialogue or negotiation, more

Figure 1 – Contributions from the car parking man and brunch lady.

Figure 2 – Contribution by local resident man about concentration of garbage next to night life establishements.

Figure 3 – Portuguese family participating.
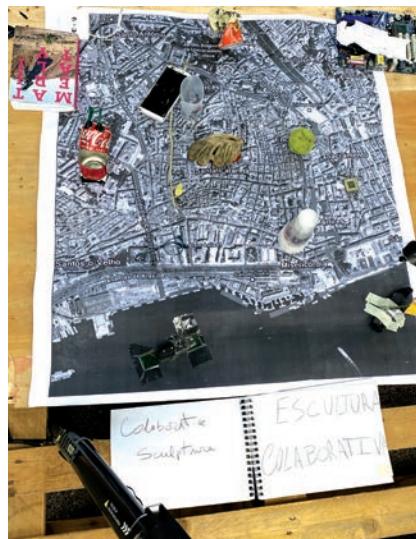
Figure 4 – Map with all contributions.

Figure 5 – *Mesa Para o Cuidar*: Sculpture making in studio phase.

participants were able to intervene on the sculpture during the exhibition, a sign that, as Ganapati states (in Cochrane, L., Corbett, J., 2018), the role of "participation in the post-process phase can be seen as encouraging continued public awareness."

Local discarded materialities and objects as participants

According to Bellamy and Kedendy-Mcfoy (2014), it will be difficult to make progress in democracy without a sense of civic virtue and public spirit, since promoting participation does not automatically translate into responsible participation. While involving groups with diminished representation in society is at the heart of social art forms, there are currents of thought that are beginning to question the exclusivity of the human being to produce the political and asks for new kinds of responsibility, that, we argue, are essential for the common good. In their article Asembaum et al. underline that new materialist theories contest radical democracy's claim that Arendt's human condition (in Asembaum et al., 2023) is the only one that allows for democratic participation. In what is relevant to this article, we emphasise the *external* perspective of the new materialisms (Asembaum et al., 2023, p. 594). Here Bennett (2010, pp. 100-101) draws on Ranciére's conception of politics (in Bennett, 2010, pp. 105-106) as a set of performances enacted by affective bodies that disrupt a given order, revealing their presence not yet denoted. This, she says, is not limited to humans but also includes materialities which, having agency, hold different degrees of power capable of disrupting certain orders granting them, therefore, political agency.

In this project, various productive relationships were considered regarding the objects and the materialities that make them up. Firstly, the influence of previous local unwanted waste agencies on conventionally taught human

spheres was considered. The post-produced persistence in the public space of such discarded bodies which, due to their resistance to corrosion, degradation, wear and tear and erosion, have allowed and allow them to compete for public space. On the other hand, their ability to harbour biodegradable material that can be consumed by biological agents that are harmful to our health or to olfactive sensations allows this same dispute to take place, this time not only on city pavements, but also in the air we breathe and consider public. These characteristics, and probably others, enable such materialities and objects, in specific assemblages to also co-create interactions and (ephemeral) communities that could not exist otherwise, such as that of a PhD student in sculpture and a group of street cleaning workers from a parish council. It's worth emphasising something that isn't always obvious. However small the agency of the materialities involved may be considered, I argue that for such an event to have taken place, they can be equated with other agencies at play, namely those of the actions of the people who launched the open call for the residency. Following this line of thought, and agreeing with Dewey (in Bennett, 2010, p. 100), when he emphasises the fact that an action is always unfolded in a field where there are already several actors, I argue that these actions are done with several actors and not by several actors that make unfold and make up such *field*. This I argue, changes the perspective when considering communities and social groups in participative art projects. With greater impact for the development of this proposal, we also considered the agencies of such bodies that appeared in news reports about the excess of rubbish created by night-time activity in some neighbourhoods of the parish (Chaves, 2017). From this angle, they not only can compete for space, disturb our health or our sense of smell, but also to co-create news through their ability to attract an excessive number of rats and disturb residents (Sic Noticias, 2024). In addition to this set of capacities, within the material-human assemblages that have appeared to us, the specific stage of their momentary life cycle in the world's transformation, production and distribution chains has also been considered by shortening the supply of materials for a participative sculpture project and preventing them to advance further energy intensive processes such as export or incineration.

Between human, non-human and local-nonlocal participation

Due to its specificity, I defend that a participatory sculptural project must not ignore its material identity which is not dissociated from political participation. To do that I recognize myself as an artist part of the human-material assemblages held together by discarded objects. Sometimes forming up real unrecognized global communities whose *voices* have been long silenced or ignored by companies, consumers and *developed*

country governments, I consider essential for the future of our common good the dissemination of spaces for their political participation. To do this, the past of the human-material assemblages, what Barad (2010, 264) calls "entangled relationalities of inheritance", must be taken into consideration. During the participatory process of this project, the awareness for such inheritance was presented and extended to the participants involved during July in the Principe Real Garden by their encounter with the objects, map and two questions already explained above: "Collaborative Sculpture" and "How do the Objects we Discard Relate with Sustainability?". The first made explicit the productive and engaged nature of the process they could choose to get involved in. With the second, the aim was to launch a challenge that required critical thinking on the part of the participants, especially when faced with the concept of sustainability alongside the presence of discarded objects and the map of the Misericórdia's parish council area.

Other way to take into consideration the political agency of material communities was by considering their role in the co-production of the capitalocene to inform the choice of materials to be used. Whether it's the consideration of Misericordia's rubbish agencies making the news and convincing local decision-makers to change their policies regarding the commercialization of plastic cups, or taking the most dramatic and obvious example of our present: climate change, which transformed the lives of thousands of people in the floods of 29 October in Valencia and many others around the world due to the insufficient inclusion of Greenhouse Gas agencies in the political discussion of the most industrialised countries, the relationships between political decisions and more-than-human agencies on a local and global level are visible. Thus, the desire to dissolve the nature-culture binomial on the part of the new materialisms are part of a local and trans-local reality confirmed, for example, by the Global Footprint Network (2024). This shows us expanded forms of political participation that can no longer be ignored in a democratic society where the myth of place as something isolated from the world has perhaps ceased to exist with the arrival of trans-locally produced products. From this perspective, and as described above, the generative condition of the world through its materialities and not just through the *human being* requires a *cycle logic* on the part of the arts (Weintraub, 2007), i.e. participation must be extended to the materialities of an artistic project, taking into account the full extent of their life cycles (extraction, production, commercialisation, disposal). What happens if we wait for the entanglements of these undesirable agencies for the balance of ecosystems to continue to *disurb* public policies instead of recognising that they have never been excluded, but rather ignored, is that we only continue to perpetuate what has led us to collectively create pressure on the limits of our conception of a habitable planet (Stockholm Resiliance Center) and with climate change soon to be the limit of *human* societies.

The map in Mesa Para o Cuidar

Participatory mapping has already been considered as a key tool for communicating development needs and as a means of supporting social change (Cochrane and Cobertt, 2018, p. 1), make visible the relationships between place and local communities (Aberley, 1999; Flavelle, 2002 in Cochrane and Cobertt, 2018). It has been recognised for its potential to challenge dominant worldviews, offer counter narratives and be used as a tool of resistance (Cooke, 2003; Ghose, 2001 as cited in Cochrane and Cobertt, 2018). Participatory mapping is also known for its capacity to integrate perspectives, recognise alternative ways of knowing and facilitate intercultural awareness (Okotto-Okotto et al., 2021; Brown & Fagerholm, 2015; IFAD, 2009 as cited in Cochrane and Cobertt, 2018).

Even though this project works with discarded objects, its relationship with sculpture justifies the adoption of participatory mapping not only to produce a *tridimensional mental map*. Sculpture, being an art of three-dimensionality that occupies and produces space, is more closely linked to the material reality of the world with which it intra-acts (Barad, 2007). This characteristic, as we have seen, makes it especially susceptible for contributing to the serious material threats created under the capitalocene (Hraway, 2016; Bradotti and Hlavajova, 2018; Demos, 2017) through the social and ecological consequences of relations and agencies they produce and may come to produce. Regarding this, the map makes it possible to address such material issues through representation, which drastically reduces scales and consequently unwanted agencies. Representation, here, becomes a way to refuse the production of *externalities* and act responsibly in the face of materiality. At the same time, it is also a reaction to other artistic proposals focusing on the dissolution of the human-materiality dichotomy, for example between geoart and its means of production (Golanska, 2018), namely the use of highly polluting heavy machinery. Projects like this, consider agencies of materialities only in relation to a very small geographical area, which, although being invisible, when revealed activate other webs of material agencies that might very well be contributing to other socio-ecological impacts.

For these reasons, in *Mesa para o Cuidar*, it was decided to use the map in conjunction with objects found in the area to which it relates. This was a way of reducing considerably material agencies that would be activated in brother spectres of their lifecycles: transport, energy expended, consumables, etc. This is also important, because although this project took place in the European Union, we know that, at times, little is done to mitigate the impacts of extraction and production of the global objects encountered and used in the project. This forces the focus to shift to the urgency of agencies and affects between such materialities and *others* (de Sousa Santos, 2007). What's more, witnessing on site the agency of post-consumer plastics increasingly exported from the

EU (Schmidt, 2024) in their destination countries would again require precisely a massive activation of agencies. Gaining a greater awareness of the complexities of these networks therefore requires different ways of realising the vitality of materialities and their agencies.

Beyound participation

Care

If recognising political agencies as more than human allows us to dissolve the anthropocentrism of radical democracy (Asenbaum et al, 2023) and address the lack of politicisation of the new materialisms, as we have seen, such dissolution also requires new modes of participation. From the perspective of discarded objects, we argue that these, also discard memories of human beings and ecologies exploited far from our perception, and therefore local and national political participation. In line and expanding on what Bauhardt (in McGregor, 2021) has call a "crisis of care" or approaching what Mierle Landerman Ukeles has termed the "Life Instict" (1969), to address these issues of Global Citizenship trough a participatory upcycling sculpture project, a dimension of care must be introduced. If caring for an object means valuing it, spending time with it, recognising its characteristics, valuing its qualities above its defects and nurturing instead of sending them elsewhere to pollute local ecologies and, maybe, affect negatively people's livelihoods, then it is also caring. While writing this article, it has become clear that lack of responsibility is closely linked to the idea of lack of care. Consideration for the other, spending time with the other, accepting their *defects*, intra-acting (Barad, 2007, p. 33) with them, are essential aspects for caring in what regards to people, objects or trough objects connected to people. The normalisation of disposal begins outside our perceptions when companies continue to profit from the production of objects, disregarding responsibility for the harmful agencies of the materialities that make up their products, their forms of production and distribution, and the agencies they have on local people or ecologies around the world. Countering their impunity and the impunity of people in the nightlife discarding responsibility in the act of buying and in the act of throwing things away, this project advocated to make a stop in daily lives and spend time with one another taking care of objects trough the making of sculpture together as an act of care.

Conclusions

Mesa para o Cuidar recognises the failure of current systems and social contracts to contribute to the common good in their tans-local nature, especially in a city context. The project seeks to share more sustainable material flows and networks connected to everyday life, recognising our

immersion in the material world. At the same time, it aimed to *bring to the table* problems of representation adhering to and expanding on crisis of care and political representations to and trough materialities by asking passers-by to interrupt their daily lives and intra-act with discarded objects, in order to integrate processes of care present in the making of a participatory sculpture that proposed the cooperation of local decisionmakers. It demonstrated how objects, when considering their material agency, should be seen as participants in their own way instead of as just inert objects waiting to be manipulated. It shared how this approach influences an artistic project and can be complemented with other methodologies such as participatory mapping. We have seen that the project, in the terms in which it has been placed in the public space, makes it possible to expand participation to actors who would not otherwise take part, but jeopardises the conceptual and reflective depth of the contributions made. For this reason, we consider it important to further develop joint reflections on the agencies created in relations between humans and non-humans and their transitory and trans-local conditions in a more explicit way or through less *fugitive* participatory projects. Such processes, we argue, contain the capacity to co-create these reflections by repositioning one's thinking and consciousness within the recognition of our human-material condition.

REFERENCES

Asenbaum, H., Machin, A., Gagnon, JP. et al. The nonhuman condition: Radical democracy through new materialist lenses. *Contemp Polit Theory 22*, 584–615 (2023). https://doi.org/10.1057/s41296-023-00635-3

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Barad, K. (2010). Quantum entanglements and hauntological relations of inheritance: Dis/continuities, spacetime enfoldings, and justice-to-come. *Derrida Today, 3*(2), 240–268.

Bellamy, R., & Kennedy-Mcfoy, M. (2014). *Citizenship: Critical concepts in political science* (Vol. I). Routledge.

Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University Press.

Braidotti, R., & Hlavajova, M. (Eds.). (2018). *Posthuman glossary*. Bloomsbury.

Chaves, S. (2017, August 26). Moradores do Bairro Alto estão revoltados com excesso de lixo. *NiT*. https://www.nit.pt/fora-de-casa/na-cidade/moradores-do-bairro-alto-estao-revoltados-com-excesso-de-lixo

Cochrane, L., & Corbett, J. (2018). Participatory mapping. In J. Servaes (Ed.), *Handbook of communication for development and social change* (pp. 1–24). Springer. https://doi.org/10.1007/978-981-10-7035-8_6-1

de Sousa Santos, B. (2007). Beyond abyssal thinking: From global lines to ecologies of knowledges. *Review (Fernand Braudel Center)*, 30(1), 45–89. https://estudogeral.sib.uc.pt/handle/10316/42128

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

Demos, T. J. (2017). *Against the Anthropocene: Visual culture and environment today*. Sternberg Press.

Demos, T.J. (2016). *Decolonizing nature: Contemporary art and the politics of ecology*. Londres, Reino Unido. Sternberg Press.

Global Footprint Network. (2024). *Earth Overshoot Day*. https://overshoot.footprintnetwork.org/newsroom/past-earth-overshoot-days/

Golanska, D. (2018). *GEOART* as a new materialist practice: Intra-active becomings and artistic (knowledge) production. *RUUKKU - Studies in Artistic Research*, 9. https://doi.org/10.22501/ruu.427704

Grenier, C. & Sakdapolrak, P. (2013). Translocality: Concepts, applications and emerging research perspectives. *Geography Compass*, 7(12), 839–850. https://doi.org/10.1111/gec3.12048

Gutberlet, J. (2017). Arts-based and participatory action research with recycling cooperatives. In L. L. Rowell et al. (Eds.), *The Palgrave international handbook of action research* (pp. 593–604). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-40523-4_41

Haraway, D. (2016). Tentacular thinking: Anthropocene, capitalocene, chthulucene. *E-flux Journal, 75*, September 2016. https://www.e-flux.com/journal/75/67125/tentacular-thinking-anthropocene-capitalocene-chthulucene/

Lithgow, M. & Wall K. (2019). Sympathy for the abject: (Re)assessing assemblages of waste with an embedded artist-in-residence. *Journal of Aesthetics & Culture, 11*(1), 1682224. https://doi.org/10.1080/20004214.2019.1682224

McGregor, S. (2021). Making matter great again? Ecofeminism, new materialism, and the everyday turn in environmental politics. *Environmental Politics, 30*(1-2), 41–60. https://doi.org/10.1080/09644016.2020.1846954

Schmidt, C. (2024, October 16). Waste plastic exports from the EU up 16 per cent in the first half of 2024. *EUWID Recycling*. https://www.euwid-recycling.com/news/markets/waste-plastic-exports-from-the-eu-up-16-per-cent-in-the-first-half-of-2024-011024/

SIC Notícias. (2024, February 29). Bairro Alto: Moradores queixam-se dos novos "vizinhos" roedores. *SIC Notícias*. https://sicnoticias.pt/pais/2024-02-29-Bairro-Alto-moradores-queixam-se-dos-novos-vizinhos-roedores-21331809

Stockholm Resilience Center. (n.d.). *Planetary boundaries. Stockholm Resilience Centre*. https://www.stockholmresilience.org/research/planetary-boundaries.html

Ukeles, M. (1969). Manifesto For Maintenance Art 1969!. *Queens Museum*. https://queensmuseum.org/wp-content/uploads/2016/04/Ukeles-Manifesto-for-Maintenance-Art-1969_5-pages.pdf

Unknown author. (n.d.). Matéria – Banco de materiais para artistas. *Instagram*. https://www.instagram.com/materiabancodemateriais/

Weintraub, L., & Schuckmann, S. (2007). *Cycle-logical art: Recycling matters for eco-art* (Avant-Guardians: Textlets on Art and Ecology). Artnow Publications.

My bed sheet is blue
Textile cartographies within prison walls

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ABSTRACT

This paper explores the transformative impact of a participatory art program within a prison setting, focusing on the *Textile Cartographies* project as a case study. *Textile Cartographies* (TC) employs co-creative textile art processes to engage young inmates in a meaningful dialogue about identity, community, and inclusion dynamics. Using disused prison bed sheets as the textile medium, the project introduces cyanotype techniques to foster creative self-expression and social cohesion. By collaborating with external artistic communities, such as Leiria's Malharia group, the initiative bridges the division between incarceration and the broader societal fabric, cultivating a sense of belonging and purpose. Drawing on frameworks of socially engaged art, the paper examines the psychological, social, and emotional benefits for participants, including enhanced self-esteem, emotional regulation, and the construction of positive personal identities. The inclusive approach prioritizes collaboration and mutual respect, empowering inmates to reimagine their roles within society. Supported by insights from scholars such as Matarasso (2021) and Gussak (2007), the discussion highlights how participatory art fosters personal growth, social cohesion, and resilience. Ultimately, the study underscores the potential of art-based programs as tools for holistic rehabilitation, advocating for their broader integration into correctional systems during young inmates' sentences, as transformative pathways to its humanization.

KEYWORDS

Socially engaged art, textile cartographies, co-creation, art processes, art in prison

Introduction

According to Matarasso (2021), participatory art happens when professionals and non-professionals use their different skills, types of imagination and interests, to create something together that they could not do individually. This statement frames what is highly developed within the scope of the international project named *Textile Cartographies* (*TC*). This project is a participatory art research project using textile arts as storytelling about sustainability issues, coordinated by the Association of Teachers of Expression and Visual (APECV), the Research Group on Arts, Community and Education (GriArCE) with other groups in Americas; Africa; Asia; Australia and Europe and is generated by art education activist Group C3.

This project aims to study the impact of personal and community narratives through textile art, by promoting opportunities of participation to minority and peripheral groups in relation to issues such as environment; climate justice; social justice and other sustainability issues, through the creation of textile-based squares and the intervention of various techniques, whose format measurements are, for all participants internationally, of 10cm per 10cm. *TC* project organizes several exhibitions a year around the world, which receive the collaboration of the other participants via air mail. The co-creation movement is continuous since 2021 and feeds the world work network through the ongoing flow of new exhibitions and dissemination of the project.

In Leiria, Portugal, there is, for the first time, the *TC* participation of young inmates from the Establishment Leiria Prison in a co-creation process with Malharia, Leiria's creative textile community. The inmate participants serve their sentences in the only prison establishment dedicated to young boys in Portugal and are between 16 and 21 years of age. They all gave their informed consent so they can participate.

My bed sheet is blue

Responding to the proposed *TC* objectives, several young inmates designed their squares for the project using fabric from prison bed sheets that are upcycled through cyanotype processes, in workshops called *Cartographies - My bed sheet is blue*, workshops led by author and researcher. Bed sheets have a strong emotional component, with most of the pieces being donated by the prison, disused due to their worn conditions. All types of marks are noticeable, from the most indelible to those that we cannot see with the naked eye. These bed sheets, marked roughly with cell/bed codes with brush and paint, were taken whole to the group and the inmates were asked to tear them to the requested measurements, this being the first stage of collective construction of a meaning, that of the possibility of restoration with an associated aesthetic value (Figures 1 and 2).

Figures 1 and 2 – *TC* Creations of young inmates (photographic capture by the prison establishment, 2024).

These cyanotypes often have a combination of the image (in white) given by three-dimensional objects opacity or printed transparencies, but also many decals of letters and numbers. This combination (figures plus numbers/letters) complements what the figures alone cannot convey: the identity that is being replaced by the force of prison logistics: the number, the designation of the pavilion, the identification of the cell. It should be noted that proposals developed by inmates must maintain anonymity by institutional determination, which often means that pseudonyms or nick names are used.

Literature shows that the practice of assigning numbers to inmates in prison, instead of using their names, can have significant psychological effects (Goffman, 1961; Haney, 2006; Zimbardo,2007). This practice contributes to depersonalisation and dehumanisation, negatively impacting their mental health and well-being, i.e. by replacing the name with their id number prison, inmates see themselves as reduced to mere objects or ciphers within the prison system. This depersonalisation can lead to feelings of alienation, isolation, and loss of Self. The reduction of individuals to numbers directly contradicts the fundamental recognition of human individuality and worth. The impersonal nature of institutional life, as highlighted by Goffman (1961), fosters a sense of detachment from the outside world and even from fellow inmates.

However, phenomena such as forced aggregation due to coexistence in the same space were made evident here by the adoption of codes and symbols common to certain groups, within this prison universe, and these numbers are part of inmate´s signature almost as an act of resistance. In this evidence, we recognize the transformative aspect of the *TC* proposal, in fact the reparative power of the art proposal.

This codes, when deciphered by one inmate's group and not another, reveals bonds of possible cohesion, even though it works by the inclusion

of some and the exclusion of others as there are, as in all institutions, affinities, relationships of protection, submission, and power regulation.

Malharia_creative textile community of Leiria

Subsequently, the inmate's works travelled to Malharia coordinator and were intervened autonomously by its community elements through techniques such as free embroidery, crochet and traditional regional embroidery. Malharia is an intergenerational and aggregating lever for the creative textile community in Leiria. After this intervention, a meeting is organized in which the creations are shared, and the *TC* interventions are complemented according to the joint suggestions of the young people and through the facilitation dynamics of the Malharia members.

These activities aim to provide contact with the results of the textile techniques used by Malharia, (considered as a work in progress) that allows the inmates to learn and add something to the creation with the support of someone who has technical mastery of embroidery (Figures 2 and 3).

As said, sharing results from the perspective of social engaged arts characterizes the culmination of each *TC* co-creation cycle and these works were sent and exhibited at *Beyond the Veil* event at *Aura Fest*, and Stazione Uno art gallery in Sicily (July of 2024), Nicosia, Cyprus (October of 2024) and briefly in Japan and India, together with works from the other *TC* groups.

On participatory art-based projects is *Use or Ornament? The Social Impact of Participation in the Arts* (1997) Matarasso highlights the profound social benefits of participatory art by stating that "participation in the arts can contribute to personal growth, enhanced confidence, and the development of new skills, while also fostering social cohesion and strengthening community ties" (1997, p. 13).

Art in prision and ethical issues

Art programs within prisons play a transformative role in the lives of inmates by providing a platform for self-expression, personal development, and connection to the world beyond the prison walls. Unlike traditional educational models, where the dynamic is often hierarchical and authoritarian, art programs are perceived by inmates as collaborative and supportive environments.

According to Currie (1989), these programs deviate from the one-way authoritative system, fostering an atmosphere where teachers and artists act as facilitators rather than enforcers. This distinction allows inmates to actively engage in the creative process, making it a mutual journey of art experimentation and learning. One of the key benefits of art programs in

Figures 2 and 3 – *TC* Creations of young inmates (photographic capture by the prison establishment, 2024).

prisons is the opportunity for inmates to form positive relationships that are not rooted in authority. Dean and Field (2003) emphasize that these interactions provide inmates with a sense of connection to the "outside" world, reducing feelings of isolation. This external linkage is vital, as it helps bridge the gap between incarceration and societal reintegration. Additionally, the absence of a punitive dynamic in these relationships fosters trust and encourages participation, making the programs more accessible and rewarding for inmates.

The immersive and engaging nature of art programs makes them particularly effective in addressing the psychological and emotional needs of inmates. Studies by Gussak (2007) and Clements (2004) suggest that inmates are more likely to take art programs seriously because of their absorbing and fulfilling qualities. This commitment not only enhances the immediate experience but also contributes to long-term personal growth and development.

Participation in art programs has been consistently linked to increased self-esteem among inmates. Self-esteem is a critical factor for mental and social well-being, influencing decision-making, goal setting, and resilience in the face of challenges. The creative process itself plays a therapeutic role by providing an outlet for inmates to externalize and manage their emotions.

According to Djurichkovic (2011), engaging in creative activities reduces depressive symptoms, offering inmates a sense of escapism from their surroundings. This is particularly significant in a prison culture where expressions of vulnerability are often suppressed. By channeling their feelings into art, inmates can confront and process their emotions in a constructive manner, leading to improved mental health and emotional stability. Moreover, art programs allow inmates to construct identities centered around positive achievements rather than their criminal pasts. This redefinition of self is crucial for rehabilitation and reintegration into society. The act of creating art provides a tangible representation of their abilities and potential, fostering a sense of accomplishment and purpose.

So, art programs in prisons serve as a powerful tool for rehabilitation and personal transformation. By offering a non-authoritarian, supportive environment, these programs enable inmates to develop meaningful relationships, enhance their self-esteem, and cope with the challenges of incarceration. The therapeutic and empowering effects of art not only improve the mental and emotional well-being of inmates but also lay the groundwork for successful reintegration into society. As such, incorporating art programs into correctional systems is not merely an educational initiative but a profound step towards humanizing and rehabilitating those within the criminal justice system.

This project could not fail to think in depth about the ethical issue of the approach as participatory and community-based arts projects demand a deep commitment to ethical practices, especially when engaging with vulnerable populations.

As Matarasso (1997) argues, the role of the researcher in such initiatives is not merely that of a facilitator but also an ethical custodian. The researcher must create a space where participants feel respected, empowered, and safe to express themselves without fear of judgment or exploitation. This involves transparency in objectives, obtaining informed consent, and maintaining the dignity of participants throughout the process. Moreover, ethical action requires acknowledging and addressing the inherent power imbalances in such projects. Researchers must approach collaboration with humility, ensuring that participants' voices guide the creative process. According to Clammer (2014), ethical participatory art must prioritize the agency of its participants, emphasizing their lived experiences and narratives rather than imposing external agendas. Researchers should act as co-creators, fostering relationships built on mutual trust and shared purpose.

Ultimately, the ethical responsibility of the researcher extends beyond the project itself, encompassing the dissemination of its outcomes. Ensuring that participants' contributions are represented authentically and respectfully reinforces the project's integrity, fostering a model of participatory art that is truly inclusive and transformative.

Conclusions

The transformative impact of participatory art programs, such as those facilitated under the *Textile Cartographies* framework, illustrates the profound psychological, social, and emotional benefits for participants. By engaging young inmates in creative processes, these programs create safe and therapeutic space for self-expression and emotional release, as highlighted by Matarasso (1997), who asserts that participatory art fosters personal growth, enhanced confidence, and skill development. Psychologically, these programs provide a vital outlet for inmates to

externalize and manage complex emotions. The act of creation offers a reprieve from the rigidity of prison life, enabling participants to channel their frustrations and vulnerabilities into tangible artistic outputs. Gussak (2007) emphasizes that art significantly reduces depressive symptoms, facilitating mental well-being. This aligns with the observations of Djurichkovic (2011), who noted that creative engagement allows inmates to confront and process emotions in a constructive manner. Socially, the inclusive approach adopted by the *Textile Cartographies* project fosters a sense of community and connection.

By collaborating with external groups like Malharia, inmates experience a sense of belonging and purpose beyond the prison walls. The co-creation process exemplifies this by linking the inmates' work with broader artistic communities, promoting mutual respect and shared purpose. Emotionally, the initiative empowers participants to reconstruct their identities around positive achievements rather than their criminal pasts. The symbolic use of prison bed sheets in cyanotype art, transformed through collective creativity, underscores themes of restoration and renewal. This resonates with Currie's (1989) assertion that art programs facilitate a shift from authoritarian teaching to collaborative exploration, enhancing participants' agency and self-worth. In terms of rehabilitation, the *Textile Cartographies* framework serves as an innovative model for reimagining correctional education. By intertwining personal narratives with artistic expression, the project not only alleviates the harsh realities of prison life but also equips inmates with skills and confidence that are transferable to life beyond incarceration. As noted by Clements (2004), the immersive and fulfilling nature of art programs encourages long-term personal development and a commitment to change.

Ultimately, the *Textile Cartographies* project embodies the transformative potential of participatory art in prison settings. It challenges conventional paradigms of punishment by prioritizing humanity, creativity, and inclusivity. This approach not only benefits the inmates but also enriches the broader community, demonstrating the power of art to transcend boundaries and inspire collective progress. Incorporating such programs into correctional systems is not just an educational endeavor but a profound step toward holistic rehabilitation and societal reintegration.

REFERENCES

Clammer, J. (2014). *Art, culture and international development: Humanizing social transformation*. Routledge.

Clements, P. (2004). The rehabilitative role of arts education in prison: Accommodation or enlightenment? *International Journal of Art & Design Education, 23*(2), 169–178. https://doi.org/10.1111/j.1476-8070.2004.00395.x

Currie, A. (1989). Art education in prison: Why teach art in prison? *Journal of Art and Design Education, 8*(1), 65–76. https://doi.org/10.1111/j.1476-8070.1989.tb00121.x

Dean, C., & Field, D. (2003). Dean, C., & Field, D. (2003). Art education and the reintegration of offenders. *Journal of Art and Design Education, 22*(3), 239–249. https://doi.org/10.1111/1468-5949.00359

Djurichkovic, A. (2011). *Art in prisons: A literature review of the philosophies and impacts of visual arts programs for correctional populations.* Arts Access Australia. https://www.artsaccessaustralia.org

Goffman, E. (1961). *Asylums: Essays on the social situation of mental patients and other inmates.* Anchor Books.

Gussak, D. (2007). The effectiveness of art therapy in reducing depression in prison populations. *International Journal of Offender Therapy and Comparative Criminology, 51*(4), 444–460. https://doi.org/10.1177/0306624X06294137

Haney, C. (2006). *Reforming punishment: Psychological limits to the pains of imprisonment.* American Psychological Association.

Matarasso, F. (1997). *Use or ornament? The social impact of participation in the arts.* Comedia.

Textile Cartographies. (n.d.). *Textile Cartographies.* Retrieved December 27, 2024, from https://textilecartographies.weebly.com/

Zimbardo, P. G. (2007). *The Lucifer effect: Understanding how good people turn evil.* Random House.

The Blob

A critical design artefact to provoke discourse on gender differentiation

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ABSTRACT

This study presents the design and testing of *The Blob*, a touch-sensitive toy developed as a Critical Design artefact to raise awareness of gender differences through playful interaction. Drawing from Discursive Design and Design Fiction, *The Blob* is conceived as a provocation that challenges social stereotypes by critically examining gender dichotomy, such as the association of pink with care and blue with strength, embedded in product interactions. As a satirical critique of gender biased perceptions, the toy prioritises discourse over play and was showcased in the exhibition "Play and Gender Expression" in Portugal. The research employs an interdisciplinary methodology that integrates cognitive psychology, interaction design, and socio-cultural inquiry to investigate gender roles and their implications. Specifically, it demonstrates how tangible artefacts like *The Blob* can leverage behaviour change techniques such as informing and provoking with the support of the psychological phenomenon of cognitive dissonance, to make complex socio-cultural issues more accessible to the public. In addition to serving as a data collection tool during the exhibition, *The Blob* facilitated dialogue on topics such as gendered perceptions of abilities, childhood memories, parenting roles, and women's empowerment in Portugal. The findings underscore the potential of this methodology as an innovative form of social intervention, extending beyond traditional design disciplines, to address persistent issues such as gender-based differences.

KEYWORDS

Critical design, gender differences, discourse, awareness

Introduction

The paper focuses on the design and testing of the product, *The Blob*, which was developed as a Critical Design artefact to generate awareness regarding the issue of gender-based differences. Inspired by the principles of Discursive Design (Tharp & Tharp, 2018) and Design Fiction (Dunne & Raby, 2013), the touch-sensitive toy, *The Blob*, aims to provoke reflection on gender biased perceptions embedded in product interactions. It offers only two possible interactions, pressing the toy softly turns it pink while applying force makes it blue. Gentle touches are associated with love and care, reflecting female gender stereotypes, whereas applying force suggests strength and protection, linked to male stereotypes. The central idea behind the artefact is to spark a discourse around identifying gender-biased perspectives, with playing with the toy serving as a secondary objective. *The Blob* was presented at the exhibition "Play and Gender Expression", aimed at a Portuguese university audience, and is included in broader research currently being conducted for a PhD in Design. This action research is grounded in Inclusive Design (Holmes, 2018) and Design for Behaviour Change (Niedderer et al., 2018) and employs the Inclusive Play Framework to promote gender-inclusive awareness among Portuguese parents, particularly regarding children and one of the most prominent objects of play, such as toys. As the primary objective of the PhD research, the Inclusive Play Framework aims to generate knowledge for parents about various gendered trends in toys that may limit children's early play experiences and contribute to gender-based differences in skills and abilities. The framework has been tested through its integration into semi-structured card games and boardgames, and implemented in workshop activities, co-created with families in Portugal, that explored different scenarios through parent-child play interactions.

Gender differentiation remains a pressing issue, shaped by socio-political factors that vary across cultures, geographies, and demographics, adding to its complexity. The influence of gender differences on children's play experiences and access to toys is analysed through biology, psychology, and social sciences. Evidence suggests that gendered toy preferences can restrict early play experiences, while repeated exposure to stereotypes during formative years may impact children's skills and abilities (Weisgram & Dinella, 2018). A range of sociocultural factors, such as education, economic background, religion, peer pressure, and governmental policies, underscores the need for a culture-specific understanding of gender. Additionally, the involvement of key human agents like parents, educators, toy designers, and advertisers highlights the importance of creating holistic approaches to promote gender-inclusive awareness among adults.

This paper specifically focuses on the methodology of designing and implementing a discourse through the Critical Design artefact, *The Blob*, that sparks questions in the viewer's mind within a specific

context. It explores how integrating diverse disciplines, such as cognitive psychology and interaction design, can effectively address socio-cultural issues, like gender biased perceptions, through design interventions. The methodology highlights the critical role of the design discipline in applying behaviour change techniques, such as informing and provoking, and emphasises making these techniques accessible through tangible forms for the general public. *The Blob* situates itself at this cross-section of interdisciplinary and transdisciplinary frameworks of design beyond the traditional boundaries (Norman, 2023), which attempts to create a space for dialogue. For example, discussions around testing *The Blob* reveal the affordances of toys in relation to gender differences in skills and abilities, while also touching on themes such as childhood memories, the role of parents in child development, and women's empowerment in Portugal.

Creating discourse through design

Discourse refers to any form of communication, spoken or written, that is structured and meaningful. However, its meaning varies depending on the context. In linguistics, discourse extends beyond the sentence level, focusing on how sentences combine to form cohesive and coherent texts. In social theory, discourse is viewed as a system of ideas, statements, and practices that shape knowledge, truth, and power relations within society. Philosophers like Michel Foucault saw discourse as a tool of power and knowledge, defining what can be said, thought, or acted upon in a given time and place (Taylor, 2014). Jürgen Habermas (1984), on the other hand, emphasised 'communicative discourse', where rational, open dialogue leads to understanding and consensus in democratic societies. In cultural and media studies, discourse plays a key role in shaping cultural meanings and identities, often focusing on media, representation, and ideology. In the context of design, the concept of discourse becomes even more critical when considered through the lens of Assemblage Theory (Buchanan, 2020). This philosophical theory explores how agency is distributed across socio-material networks of people, objects, and narratives, rather than being solely attributed to individuals. It views social complexity as fluid and interconnected, where human action depends on material dependencies and a network of discursive elements spanning legal, cultural, and economic systems. Scholars like Bruno Latour (2005), Gilles Deleuze and Félix Guattari (1987), Michel Pêcheux (1983), and Nigel Thrift (2008) highlight the role of discourse as a force within an assemblage, shaping how its components are understood and interact.

According to Ontological Design (Clune, 2017), every design artefact has its own discourse. However, when examining the role of design methodologies in the deliberate creation of discourse, modern design philosophies such as Critical Design emerge. Critical Design challenges preconceptions,

provoking new ways of thinking about everyday objects, their use, and the surrounding culture. Instead of focusing purely on aesthetics, functionality, or marketability, Critical Design seeks to explore the deeper implications of design choices and their social, cultural, ethical, or political impact. It involves designing objects, artefacts, or experiences that provoke discussion and reflection about current issues, future possibilities, or societal norms. The goal is often to raise awareness, spark debates, critique ideologies, and encourage people to think critically about the world around them. In contemporary times, Critical Design has evolved into various forms, including Design Fiction, Speculative Design, Interrogative Design, Adversarial Design, Reflective Design, and Discursive Design.

For instance, Huggable Atomic Mushroom[1], an artefact from the collection Designs for Fragile Personalities in Anxious Times, was created by Dunne and Raby in collaboration with Michael Anastassiades between 2004 and 2005. This evocative design artefact juxtaposes the horror of a bomb explosion with the comforting softness of a pillow, provoking conflicting emotions. In the context of discourse, it serves as a speculative object to provoke discussion, challenging people to think about how we emotionally and socially interact with such existential threats (Dunne & Raby, 2013). As another example, Polluted Popsicles[2] is an artefact created by students from the National Taiwan University of Arts. The project uses visual aesthetics to spark a discourse about the contrast between the appealing appearance of an edible item and the troubling reality of pollution in Taiwan's rivers. The combination of aesthetics and unsettling content creates a powerful emotional response, sparking critical conversations about sustainability and pollution (Tharp & Tharp, 2018).

Both of these examples belong to Critical Design. The Huggable Atomic Mushroom originates from Design Fiction, a Speculative Design practice that employs fictional narratives, prototypes, and artefacts to explore possible futures. In contrast, the Polluted Popsicles focus on Discursive Design, a practice aimed at stimulating discourse, whether through conversation, debate, or deeper introspection, on specific topics.

Speculative Design incorporates several methods, such as fictional worlds, cautionary tales, what-if scenarios, thought experiments, counterfactuals, reductio ad absurdum experiments, and prefigurative futures. Meanwhile, Discursive Design artefacts have specific aims tied to discourse, including reminding, informing, provoking, inspiring, and persuading. The previous two examples were intentionally chosen to demonstrate the scope of the literature explored in this paper and their connection to the design process of the toy, *The Blob*.

1 https://dunneandraby.co.uk/content/books/66/0

2 https://www.theguardian.com/cities/gallery/2017/sep/01/popsicles-pollution-ice-lollies-taiwan-taipei-contaminated-waterways

Both Critical Design artefacts follow the mechanics of cognitive dissonance (Aronson, 1969). Cognitive dissonance is a psychological concept that refers to the mental discomfort or tension experienced when a person holds two or more contradictory beliefs, values, or attitudes, or when their behaviour conflicts with their beliefs or values. In the case of The Huggable Atomic Mushroom, the mushroom cloud, a symbol of destruction and death, is transformed into a soft, comforting pillow, creating a deep emotional conflict. Users may resolve this discomfort by questioning societal narratives about nuclear weapons, exploring peace-building actions, or reflecting on the ethics of war and technology. Similarly, in Polluted Popsicles, popsicles, typically perceived as refreshing, colourful, and enjoyable treats, are instead filled with pollutants and trash. This creates a clash between the aesthetic expectations of something desirable and the disturbing reality of pollution. People may be motivated to reduce this discomfort by adopting environmentally responsible behaviours, such as reducing waste, advocating for clean water initiatives, or reconsidering their consumption habits.

In the following section, we explore how the principles of cognitive dissonance are incorporated into the design and testing of the Critical Design artefact, *The Blob*, to create discourse on gender differentiation.

Development and testing of The Blob

The focus of this paper is to explore Critical Design methodologies and establish a connection with cognitive psychology to promote gender-inclusive awareness in toys and child development. Drawing on Assemblage Theory (Buchanan, 2020), it seeks to foster discourse through collective consciousness about the issue of gender-based differences that can contribute to the segregation of toys and the development of related skills. This approach can foster discourse in the form of discussion, debate, or reflection on the preconceived gender biases shaped by cultural norms. Such biases often manifest in gendered assumptions regarding skills and abilities, professions, family roles, educational preferences, economic conditions, and even seemingly trivial aspects such as colour associations, like pink and blue. Moreover, the psychological theory of cognitive dissonance serves as a key mechanism in challenging deeply rooted gender-biased beliefs by creating mental conflict and promoting discourse through critical reflection. The intended outcome is to uncover and address gender-related biases and stereotypes, facilitating a shift in behaviour that acknowledges the diverse skills involved in holistic child development, irrespective of gender.

The visualization of *The Blob* is grounded in preliminary research questions that examine the factors contributing to a toy being perceived as gendered and the influence of human perception in toy interactions. This exploration was supported by background research from the PhD in Design study, which provided insights into gender differentiation from both psychological

Figure 1 – Functionality of the toy, *The Blob* (Dhibar, 2023).

and cultural perspectives. The theoretical framework was further enriched by the principles of Discursive Design (Tharp & Tharp, 2018), particularly the aims of *informing* and *provoking*, with *informing* offering new insights to raise awareness or deepen existing knowledge, and *provoking* eliciting emotional and intellectual responses to generate attention, debate, or action. Additionally, the philosophy of Design Fiction (Dunne & Raby, 2013) guided the integration of gender dichotomy into the toy's interaction design, particularly through the use of pink and blue lights as a form of feedback. *The Blob* offers two possible interactions that reflect social biases related to femininity and masculinity. As we can see in Figure 1, gently pressing the toy causes it to turn pink, while applying more force changes it to blue. This acts as a metaphor for the societal association of pink with femininity and gentleness, and blue with masculinity and strength.

The Blob functions as a colour-changing toy, using touch sensitivity through a 3D-printed polyethylene fibre surface. The colour-changing mechanism is powered by a pressure sensor strip, Arduino, and LEDs. These dynamic features help maintain its interactive nature as a toy. Also, the name "Blob" was intentionally chosen to evoke a sense of joy and playfulness, reflecting the positive attitude associated with the toy. However, the engagement with the toy leads to the broader goal of understanding and confronting gender differentiation through the colour change and the amount of pressure applied. *The Blob* aims to create an experience that encourages reflection on gender segregation in skills and abilities by associating colour with touch intensity. While users may have fun and enjoyment interacting with the toy, the intellectual understanding of gender associations may provoke a sense of discomfort. This subtle discomfort, hypothesised as a form of cognitive dissonance, prompts users to engage with the toy more deeply, rather than passively interacting with it. As a result, questions may arise about why certain colours or actions are associated with specific genders, which may inspire viewers to advocate for or design toys that challenge traditional gender norms.

The Blob was presented at the exhibition *Play and Gender Expression*, targeting a Portuguese university audience at IADE in Lisbon, Portugal, including students, professors, and staff. The exhibition ran for three days in a dedicated space and was followed by the creation of a website[3] to showcase the event on digital platforms. The exhibition featured six Critical Design artefacts, including *The Blob*, with each artefact accompanied by a dialogue panel explaining its context. The author was present in the exhibition space, engaging with participants as they interacted with the artefacts. Discussions initiated by *The Blob* explored topics such as women's empowerment, the role of parents in child development, childhood memories of the participants, and issues faced by the transgender community in Portugal. Most notably, it sparked dialogue on the multiple attributes and utility of toys in child development, connecting these discussions to the broader issue of gender differentiation. These dialogues reflect the concept of collective consciousness in relation to Assemblage Theory, as previously discussed. Moreover, each artefact was also presented with a closed voting system as part of a data collection technique. The voting options were derived from the stages of the Inclusive Play Framework, which is part of the PhD research in Design. Figure 2 shows the form used on the website, displaying the available options according to the three levels of the Inclusive Play Framework. To generate gender-inclusive awareness, the Identify level focuses on recognizing elements of gender differentiation; the Diversify level explores varied ways of relating to these elements; and the Inclusify level seeks to integrate this recognition and relational understanding into the broader human experience. The sequential development of knowledge across the three levels of the Inclusive Play Framework is a key factor in shaping alternative perceptions and promoting improved behaviour among parents in relation to gender inclusion.

The questions in the data collection technique were aligned with three levels, Identify, Diversify, and Inclusify, and were designed using simple, meaningful language to give participants three distinct contextual choices. For example, participants were asked if they see the message (Identify), talk about it (Diversify), or consider it when talking to children (Inclusify). These questions reflected behaviour change mechanics and aimed to prompt recognition, discussion, and inclusion of gender-related themes. A total of 123 participants engaged in the physical exhibition, while 13 responses were recorded during the first month of the website's launch. As shown in Figure 3, the data collected for *The Blob* indicated that a higher percentage of participants recognized the issue in their daily lives, compared to those willing to discuss it with others or consider it when engaging with children . In recent times, Critical Design approaches have often been perceived as limited to art exhibitions, installations, displays, and other forms of visual communication. However, this particular data collection technique aimed

3 https://sites.google.com/view/play-and-gender-expression/home

Figure 2 – The form used on the exhibition website to collect responses related to *The Blob*.

to foreground the creation of explicit, communicable, and intangible knowledge, extending beyond the implicit impact of the design artefacts, within a Research Through Design framework (Herriott, 2019).

However, it is important to note that gender knowledge is a sensitive topic for different individuals. The intention behind using Critical Design artefacts like *The Blob* is to initiate discourse as a means of fostering gender-inclusive awareness. The testing of *The Blob* in the exhibition scenario revealed several critical factors that need to be considered when evaluating its impact. Most notably, the term "gender" itself can create a pre-experience bias even before participants interact with the toy, potentially disrupting the intended mechanics of cognitive dissonance. Additionally, the accompanying information panel for the artefact may have influenced the experience, as participants were free to engage with the artefacts in a non-linear, unstructured manner. Although the exhibition provided an information panel with proper instructions, it was unclear whether it functioned as intended. Given these factors, further testing is needed to evaluate *The Blob* as a standalone artefact without any predefined text or supporting materials, allowing for a more unbiased and organic interaction. Finally, this paper specifically focuses on the theoretical framework behind the approach aimed at fostering discourse through design. The implementation of *The Blob* is still in its early stages, represented by an initial prototype. Testing this prototype presents opportunities for refinement in terms of interaction and aesthetics. The
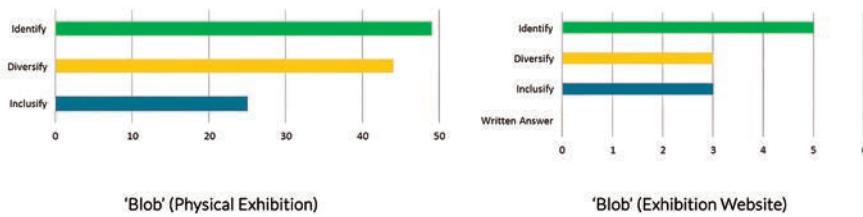
Figure 3 – Collected responses to *The Blob* from the physical exhibition and the website.

initial idea draws inspiration from the flexible blobfish, enabling the prototype to adapt its shape in response to applied pressure. The critical fruition of *The Blob* depends on future improvements and developments aligning with the theoretical framework presented in this paper.

Conclusion and future direction

This paper has explored the design and initial testing of *The Blob*, demonstrating the potential of Critical Design as a compelling methodology for addressing socio-cultural issues such as gender bias perceptions in toys and its implications for child development. Through the integration of cognitive psychology, interaction design, and cultural inquiry, the artefact effectively initiated discourse around gendered perceptions, skill development, and societal norms. The study further illustrates how interdisciplinary and transdisciplinary design frameworks can cultivate critical dialogue, positioning product interaction as a form of alternative social intervention.

Although *The Blob* remains in its early stages of development, the methodological integration of Design Fiction and Discursive Design, anchored in the psychological theory of cognitive dissonance, signals promising opportunities for future exploration in this area. Upcoming iterations will aim to refine the prototype into a more cohesive and simplified form, in closer alignment with the theoretical foundations outlined in this paper. Enhancements will also be guided by insights from preliminary user testing, with an emphasis on optimising the interaction design and identifying testing environments conducive to meaningful discourse on gender differences. Finally, more robust data collection methods, particularly qualitative approaches, will be adopted to more effectively capture and assess the artefact's role and impact within the broader social assemblage.

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REFERENCES

Aronson, E. (1969). *The theory of cognitive dissonance: A current perspective*. *Advances in Experimental Social Psychology*, *4*, 1–34. https://doi.org/10.1016/S0065-2601(08)60075-1

Buchanan, I. (2020). *Assemblage theory and method*. Bloomsbury Publishing.

Clune, S. (2017). Futuring and ontological designing. In K. Niedderer, S. Clune, & G. Ludden (Eds.), *Design for behaviour change* (pp. 128–137). Routledge. https://doi.org/10.4324/9781315576602-11

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

Dhibar, A., Gonçalves, E., & Gorgel, A. (2024a). Inclusive play framework: An approach to promote awareness about gender-neutral play in Portuguese context. In *Proceedings of the EIMAD Conference,* pp. 243-261. Springer. https://doi.org/10.1007/978-3-031-73705-3_18

Dhibar, A., Gonçalves, E., & Gorgel, A. (2024b). Play and gender expression: A critical design exhibition to generate and measure awareness about gender differences within the context of children and toys. In *Proceedings of the HCI International Conference*, pp. 275-294. Springer. https://doi.org/10.1007/978-3-031-60412-6_20

Dunne, A., & Raby, F. (2013). *Speculative everything: Design, fiction, and social dreaming*. MIT Press.

Herriott, R. (2019). What kind of research is research through design? In *Proceedings of the IASDR 2019 Conference*

Holmes, K. (2018). *Mismatch: How inclusion shapes design*. MIT Press.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Oxford University Press.

Niedderer, K., Clune, S., & Ludden, G. (Eds.). (2018). *Design for behaviour change: Theories and practices of designing for change*. Routledge.

Norman, D. A. (2023). *Design for a better world: Meaningful, sustainable, humanity centered*. MIT Press.

Pêcheux, M. (1983). *Language, semantics and ideology: Stating the obvious*. Palgrave Macmillan.

Taylor, D. (2014). *Michel Foucault: Key concepts*. Routledge.

Tharp, B. M., & Tharp, S. M. (2018). *Discursive design: Critical, speculative, and alternative things*. MIT Press.

Thrift, N. (2008). *Non-representational theory: Space, politics, affect*. Routledge.

Weisgram, E. S., & Dinella, L. M. (2018). Gender typing of children's toys: How early play experiences impact development. *Psychology of Women Quarterly*, *43 (3)*, pp. 271-274. American Psychological Association. https://doi.org/10.1177/0361684319835161

Unidos venceremos!

A transdisciplinary approach to participatory public sculpture in Canal Caveira, Portugal

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ABSTRACT

This article explores a transdisciplinary approach to participatory public sculpture, focusing on the project Unidos Venceremos! – Arte e Comunidade em Debate as a case study. This project was developed in the village of Canal Caveira, in the municipality of Grândola, Portugal, in 2024, and it started as a proposal from the municipality to engage the local population in a participatory process, with the purpose of creating a monument to celebrate the 50th anniversary of the Portuguese 25th of April Revolution. A multidisciplinary team - composed by artists, anthropologists, architects - built the mediation process and invited the local population for a 'collective construction' project. The current case study explores the citizen's involvement in public space reconfiguration through a process where the co-creation of a public artwork transcends its aesthetic and symbolic purpose, integrating functionality and the endogenous flora of the territory, ultimately nurturing an ecological intervention into the shared space. The article focuses on concrete examples how transdisciplinary collaboration among mediators allowed the project to evolve beyond its initial premises. By dissolving rather than reinforcing disciplinary boundaries - and thus avoiding the confinement of the artwork within a specific disciplinary category - this transdisciplinary process placed citizen agency at the core of decision-making, shaping a more inclusive transformation of public space.

KEYWORDS

Public sculpture, transdisciplinarity, participatory art, co-creation, citizens agency

Introduction

By exploring the transdisciplinary dimension of participatory public sculpture, this study provides examples of how the academic diversity of the mediation team – composed by artists, architects and anthropologists - influences both internal collaboration and community engagement, providing the conditions for an artwork that integrates both functionality and symbolism.

The project Unidos Venceremos! – Art and Community in Debate is an example of this approach, promoting a co-creation process in which citizens actively engage in the conception of a public sculpture. In this article, we begin by providing a brief contextualization of the community and the project. Next, we focus on transdisciplinarity, differentiating the concept from other approaches, such as interdisciplinarity - and exemplify how this process is operationalized in the present case study, emphasizing, in particular, the importance of intersubjectivity in the collective conceptualization and resignification of both the sculpture and the surrounding public space. In the final section, we address the expansion of the project into the landscape, incorporating endogenous trees in the area surrounding the public artwork.

Rather than adhering to rigid definitions of sculpture, urban design, or architecture, this project embraces a dynamic process, in which emerging concepts from the community shape the final artwork. Focusing solely on fixed concepts that crystallize disciplinary dialogues would mean, from the beginning, rejecting functionality, an essential need for the citizens in this case study. It is precisely this possibility of integration, beyond disciplinary boundaries, that we seek to demonstrate, bringing to light how such an approach was made possible.

Brief contextualization of the project

Canal Caveira is a village located in the municipality of Grândola, Alentejo, formed in the confluence of two rural properties, (Canal and Caveira "herdades"), a place called originally São Lourenço, near the Canal Caveira railway station and the National Route259. Before the A2 motorway was built, this was the main road to the Algarve, and Canal Caveira became a well-known place, where it was possible to make a stop on the long car journey, to rest and satisfy the stomach. This crossroad location conditioned the village urban growth, as the residential part of Canal Caveira is hidden behind the continuous facade of restaurants and storages next to the National Road. The village is composed mainly by two roads, parallel to the Nacional Route. It doesn't have the organic structure of Alentejo villages, which usually expand more or less homogeneously from a central point, where the services (church, bank, cafes, post office) are located. Here, the 'centre' is a

multifunctional Community Centre where all the collective activities take place. It is located at one end of the village and is a building built in the 'new neighbourhood', the Unidos Venceremos (operations SAAL - Serviço de Apoio Ambulatório Local) neighbourhood, a housing complex of 46 single-family homes that began to be built in 1978 under the guidance of the municipality of Grândola, and occupies more or less half of the village perimeter. The other half is still known, by the residents, as the São Lourenço side.

Fifty years after the revolution, this participatory sculpture project revives the principles of self-construction from the SAAL initiative and once again fosters debate and reflection on public space. The project aligns with the methodological framework established in other participatory public art projects, such as the *Monumento à Multiculturalidade* (2011/2013, Monte de Caparica) and *Um Monumento para o Lousal* (2018/2021), which share the premise of co-creation with the community. However, it distinguishes itself through multiple factors, as each group of participants is unique, reflecting the social, cultural, and territorial specificities of the region.

On the other hand, the academic team members, which play a mediating and structuring role in the sessions, carry with them social representations that shape their unique identities. These representations are not static (Moscovici, 1981; Vala, 1986), they evolve over time, influenced both by the experience accumulated in previous projects and by the intersubjective dynamics established with new groups of citizens. Thus, this project does not merely replicate pre-existing methodologies but continuously adapts to the singularities of individuals, the context, and the territory in which it is located.

In this case study, the region's environmental context presents key challenges: located in the South of Portugal, where temperatures are high during the Summer, it is an arid area, and the scarcity of shaded spaces and outdoor resting areas is a significant issue for residents. The following section examines how these needs were identified by the mediating team and subsequently incorporated into the artistic creation process.

Transdisciplinarity, intersubjectivity, and social representations in the creation of the artwork

From interdisciplinarity to transdisciplinarity

The initial proposal presented to CIEBA – Centro de Investigação e de Estudos em Belas-Artes – aimed to explore how socially engaged artistic creation functions as a tool for action and reflection within key discourses on art as social practice (Vicente, 2023). Additionally,

the methodological premises were guided by a transdisciplinary approach, promoting the involvement of different scientific fields and the engagement of other R&D centers (idem). Thus, a transdisciplinary perspective, was, from the beginning, intertwined with participatory processes.

According to Olga Pombo (2021), interdisciplinarity can be understood as a specific way of producing knowledge, particularly in contemporality. It involves the need, for each discipline, to engage in dialogue with others, transferring concepts, hypotheses, methodologies, and technologies. It does not advocate for the disappearance of disciplines or the subordination of some to others. Instead, it demonstrates that knowledge has reached a point where each field requires connections with others to continue its program or trajectory. For this reason, interdisciplinarity can be considered a network strategy to solve complex problems that cannot be addressed by a single discipline.

Interdisciplinarity illustrates that the mode of knowledge production has evolved to a stage where each field (or discipline) must establish connections with others (not necessarily closely related fields) in order to sustain its progress.

Transdisciplinarity, in turn, extends interdisciplinarity beyond the cognitive realm, encompassing artistic, philosophical, political, and technological dimensions. It seeks to understand this interconnectedness (brought about by interdisciplinarity) in a broader sense and represents an expansion of the interdisciplinary concept to areas that are not immediately cognitive, reflecting the complexity of the contemporary world. Thus, the author argues that interdisciplinarity is a cognitive issue, whereas transdisciplinarity is a vital one.

Sue McGregor (2015) also discusses transdisciplinarity, identifying two main approaches: the Nicolescuian perspective and the Zurich approach. The Nicolescuian perspective is rooted in metaphysics, quantum physics, and complexity science. This approach seeks to establish a new ontology (reality), logic, and epistemology (knowledge as complex and emergent). For Nicolescu, transdisciplinarity aims to unify knowledge from disparate sources, connecting the Object (science) with the Subject (humans). The author proposed that transdisciplinary ontology encompasses ten different Realities, organized into three levels: the internal world of humans, the external world, and a third mediating level, the "Hidden Third." In contrast, the Zurich approach focuses on the joint resolution of problems related to the science-technology-society triad. This approach defines transdisciplinarity as a new form of learning and problem-solving that involves cooperation between different sectors of society.

McGregor (idem) highlights that while both approaches are concerned with science, society, and the complexity of the contemporary world,

they conceptualize transdisciplinarity at fundamentally different levels. The Nicolescuian perspective emphasizes complexity through three key axioms (ontology, logic, and epistemology), whereas the Zurich group focuses on how to conduct science and research differently to accommodate complexity. Furthermore, for Nicolescu, transdisciplinarity exists between disciplines, across different disciplines, and beyond all disciplines. In contrast, the Zurich approach narrows the definition, asserting that transdisciplinarity pertains to the interaction between disciplines within social constraints.

Therefore, the key issue lies in the implementation of an approach that may either lead to the dissolution of disciplinary boundaries or, alternatively, align with the consistency and preservation of epistemological limits, which, in turn, adapt to the complexity that characterizes reality. In addition, these epistemological boundaries can themselves be challenged by expanding, in certain contexts, the very concepts that structure disciplines. For instance, Hal Foster (1996) reflects on the proximity between contemporary art and ethnography, discussing how artists adopt ethnographic and anthropological methodologies in community-based artistic processes. However, Foster (idem) also raises concerns regarding the risks of such an approximation or methodological appropriation without proper critical engagement, which, in our view, stems from a foundational knowledge of the respective disciplines involved.

In this case, collaborative practice - integrating various mediating agents, such as architects, anthropologists, artists and students - constitutes the fundamental base for unveiling a transdisciplinary approach, expanding the scope of artistic intervention, and fostering a process in which citizens actively participate in the transformation of their environment through co-creation.

The transdisciplinary dynamics in practice

In this case study, all the members of the academic team actively participated in the mediation process with the citizens, regardless of their specific disciplinary backgrounds. As a result, not only was there a methodological horizontality, but all team members played an active role in shaping the experience. During the sessions, no rigidly assigned roles were enforced; instead, the team adopted a flexible approach, adapting to emerging dynamics and the evolving needs of participants. In this sense, the active mediation of the entire team was crucial in ensuring that citizens could freely express their ideas.

Intersubjectivity played a central role in the participatory process, both in the preparation phase - where the team engaged in dialogue, structured the sessions, and critically reflected on the different
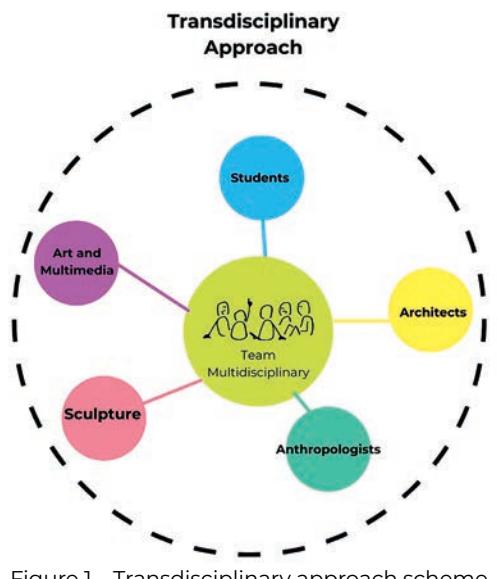
Figure 1 – Transdisciplinary approach scheme.

stages of the project - and during the sessions themselves, in direct interaction with the citizens. Drawing on the perspective of Husserl & Brough (1991) - who argue that intersubjectivity does not imply the uniformization of perceptions, but rather a space for negotiating different subjectivities - and on Freire's (1967) dialogical process, the mediators sought, throughout the sessions, to extract content through empathy and active listening. Their objective was not to impose fixed or rigid social representations, but rather to re-signify, support, and amplify the voices of the participating citizens, while remaining fully aware that, as mediators, their own perception of reality may always instill meaning and feeling.

On the other hand, in the process of designing each session, the approach was closer to interdisciplinarity or to the concept of transdisciplinarity derived from the narrower definition of Zurich (McGregor, 2015). Although the horizontality of processes remained a guiding principle, the preparation of the sessions relied on different contributions, depending on their nature and specific objectives. In a non-rigid manner, each discipline played a more significant role in shaping particular moments.

For instance, in the preparation of all sessions, the anthropologists emphasized the importance of randomly assigning participants to tables, preventing the formation of pre-structured groups. This strategy aimed to stimulate dialogue between different perspectives and ensure a more equitable participation among all citizens, guaranteeing that every voice was heard in the co-creation process.

Specifically, in the preparation of the first session, although members from different academic backgrounds were involved in the process, anthropology played a predominant role in conceptualizing the session, while the arts had a greater influence on its formalization. The focus on the genealogical and professional mapping of families aimed, not only to foster a reflection on the evolution of labor practices over time, and their historical and cultural significance within the local context, but also to serve as an icebreaker to encourage engagement and dialogue.

When designing the second session, the team members identified, not only the data emerging from the previous session, but also the significance of citizens' spontaneous discussions about public space and their needs. This was only possible through the implementation of participatory methodologies, in which intersubjectivity played a fundamental role. In this sense, all team members made significant contributions to defining the objectives of the second session, ensuring that the concerns raised in the first stage were duly considered and integrated into the project's development. This step was crucial, as taking into account citizens' concerns regarding public space, the second session moved away from a rigid and purely symbolic definition of the sculpture. During the session, citizens were invited to design solutions for the surrounding public space, considering not only the sculpture itself but also the infrastructure around it. As a result, the fundamental need for elements such as trees, shade, resting areas (benches and/or tables), and access to water became evident. This moment marked a turning point in the case study, as rather than being conceived as an isolated object, the sculpture began to be thought as part of an integrated urban ecosystem.

In preparation for the third session, all team members actively participated in conceptualizing a question board (Who are we? Where do we live? What do we do? What do we want for the sculpture?). The initial idea, proposed by the artists, consisted of a rotating board where each group would answer one question before passing it to the next table, which would continue the process by responding to a new question based on the previous answers. However, the Anthropology team raised methodological and social concerns, arguing that this dynamic could become overly complex for participants and, more importantly, could compromise citizen agency. By fragmenting the responses and preventing participants from following the progressive construction of their ideas, there was a risk of diluting both individual and collective narratives, making the activity less meaningful. As a result, an alternative approach was chosen - each table would have a single board with no rotation - ensuring that all citizens in each group could develop a coherent narrative sequence from start to finish. The role of anthropology was thus crucial in ensuring that the methodology reinforced citizen agency.

While planning the fourth session, the contribution of the anthropologists once again played a crucial role in the project, suggesting the creation of 'word clouds' based on the data emerging from the answers provided in the previous session. These words were also quantified according to their frequency, meaning that the most frequently mentioned words appeared larger in the visualization. This strategy provided visibility to the collective ideas of the citizens, translating them into two distinct visual narratives: one focused on emotions - highlighting values of community unity, traditions, social cohesion, and the cultural heritage of the village - and another centered on material aspects, emphasizing the natural and built landscape, such as the Caveira Mine, the railway, endogenous trees and water scarcity. This exercise enabled a visual organization of potential concepts associated with the future artwork, marking a key stage for the beginning of its materialization.

The fourth and fifth sessions were thus dedicated to transforming abstract concepts into three-dimensional models. Between these two sessions, the artists and architects structured the progressive transition from a more free-form exploration of three-dimensional experimentation (using various techniques, including drawing, clay modeling, cutting, collage, and assembling different materials - fourth session) to an approach focused on technical feasibility, real scale, and construction constraints (considering materials such as concrete, steel, wood, water, and trees – fifth session). Additionally, all members of the academic team emphasized the importance of allowing citizens to freely select a set of models from the previous session to further develop the final iterations. During the fifth session, mediators provided support throughout the materialization process of the models.

The final artwork, *Raízes da Liberdade* – integrating an endogenous tree, a semicircular bench, and an arch structure – was developed through a co-creation process of six sessions involving 40 participants and selected in a public voting event with approximately 100 people, including both local residents and external contributors. This collective engagement reinforced the participatory nature of the project, extending its impact beyond the immediate community. The artwork reflects the dissolution of conventional sculptural categories and can be understood in light of Rosalind Krauss's (1979) concept of sculpture in the expanded field, as it blurs the boundaries between sculpture, architecture, and landscape.

After the sessions, the academic team convened to evaluate the project's next steps. A key idea, proposed by the Fine Arts members, centered on revitalizing the area around the artwork by creating a park with endogenous trees. Following this, the Architecture team provided essential project support in its design. This transformation will be symbolized by the planting of trees from the Grândola municipal plant nursery on the day of

Figure 2 – Preparation of the first session.

Figure 3 – Second Session: construction of models created in response to the question "What would you like that place to be like?" (Manuel Taveira, 2024).

Figure 4 – Fourth Session: construction of three-dimensional models (Manuel Taveira, 2024).


Figure 5 – First model of the final sculpture (Manuel Taveira, 2024).

the sculpture's inauguration, in a collective act inspired by Joseph Beuys' *7000 Oaks* project (1982) and its capacity to transform a *non-place* (Augé, 1992) into a meaningful public space for the community.

Conclusion

In this article, we focused on transdisciplinary dynamics of the mediating team within the present case study, highlighting concrete examples of group dynamics at different stages of the project. We acknowledge that any description is merely an attempt at approximation, as reality far surpasses any analytical and descriptive efforts. However, we emphasize the importance of sharing insights, traces of these actions and, above all, restoring the connection between theory and experience by highlighting key moments of team dynamics that can be adapted and improved upon in future participatory projects.

Moreover, when addressing transdisciplinary dynamics, we must not forget that this is a participatory project, with the ultimate goal of

Figure 6 – Top View of *Raízes da Liberdade*, including the surrounding territory (Sergio Vicente, 2024).

creating a public artwork. In this sense, transdisciplinarity also reflects the specific academic nature of the mediation agents - in this case study, architects, artists, namely sculptors, and anthropologists - who contribute with their knowledge to give shape to a public artwork, with a material and symbolic nature that responds to the citizens' conception, and, at the same time, is feasible on site, taking into account specific practical contingencies, such as the available budget, the need for an execution project, available materials and construction typologies, construction deadlines and the sense of openness of local political agents to a project of this nature.

In addition, we reflect here on the role that transdisciplinary plays in fostering openness - both for the mediating team and for the citizens that participate in the sessions - toward a work of art that transcends disciplinary boundaries. This occurs in two key aspects: a) a transdisciplinary academic team that is guided by participatory methodologies; b) through the agency of the citizens, who acknowledge that their needs are fundamental, and that an artwork can be both form and function, a built object and a natural element.

In this context, it is not relevant to define, here, whether the artwork is a sculpture, architecture, or urban design, nor to confine it within a specific disciplinary category. What truly matters is citizen agency, the impact on participants (Cruz, 2021), and the transformation of public space, addressing the community's needs.

REFERENCES

Augé, M. (2012). *Não-lugares: Introdução a uma antropologia da sobremodernidade* (Original work published 1992). Ed. Letra Livre.

Beuys, J. (1982) *7000 Oak Trees*. Tate. https://www.tate.org.uk/art/artworks/beuys-7000-oak-trees-ar00745

Foster, H. (1996). The artist as ethnographer. In *The return of the real: The avant-garde at the end of the century.* MIT Press. https://monoskop.org/images/2/27/Foster_Hal_The_Return_of_the_Real_1996.pdf

Freire, P. (2019). *Educação como prática da liberdade* (Original work published 1967). Ed. Paz e Terra.

Husserl, E., & Brough, B. (1991). *On the phenomenology of the consciousness of internal time (1893–1917)*. Kluwer Academic Publisher.

Krauss, R. (1979). Sculpture in the expanded field. *October*, 8, 30–44. https://doi.org/10.2307/778224

LOUSAL | Um monumento para o Lousal – arte pública e participação cidadã. (2019). DINÂMIA'CET-Iscte. https://www.dinamiacet.iscte-iul.pt/post/LOUSAL

McGregor, S. (2015). The Nicolescuian and Zurich approaches to transdisciplinarity. *Integral Leadership Review*. https://integralleadershipreview.com/13135-616-the-nicolescuian-and-zurich-approaches-to-transdisciplinarity/

Moscovici, S. (1981). On social representations. In J. Forgas (Ed.), *Social cognition: Perspectives on everyday understanding* (pp. 181–209). Academic Press.

Pombo, O. (2021). Interdisciplinaridade: Entrevista com Olga Pombo. *Latin American Human Rights Studies*, 1, Article e70672. https://doi.org/10.5216/lahrs.v1.70672

Vala, J. (1986). Sobre as representações sociais – Para uma epistemologia do senso comum. In J. Pito (Ed.), *Cadernos de Ciências Sociais* (No. 4). Ed. Afrontamento.

Vicente, S. (2016a). *A escultura como expressão pública da cidadania: A monumentalização da cidade de Almada entre 1974 e 2013* (Doctoral dissertation). Universidade de Lisboa, Faculdade de Belas Artes. http://hdl.handle.net/10451/24023

Vicente, S. (2016b). *Escultor cidadão, cidadão escultor: Um monumento à multiculturalidade em Almada*. Faculdade de Belas Artes, Universidade de Lisboa. ISBN 978-989-8771-52-0

Vicente, S. (2023). *Unidos venceremos! Arte e comunidade em debate. Proposta de 'inscrição projeto piloto +'.* Centro de Investigação CIEBA.

technology, inclusion and situated innovation

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Museum of augmented urban art in Italy

A transdisciplinary phygital urban paste-up collab

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ABSTRACT

The Museum of Augmented Urban Art is an Italian transdisciplinary *phygital* urban art collaboration, pioneering a design movement at the intersection of urban art and digital technology that impacts people and spaces through a co-designed methodology. By utilising augmented reality to recontextualise urban surfaces and integrate digital elements into cityscapes, the Museum of Augmented Urban Art has developed an innovative approach that embodies contemporary resistance within the Design for Social Innovation framework. Furthermore, as the Museum of Augmented Urban Art incorporates cutting-edge technology, it addresses the complexities of user engagement, ensuring that the public can fully experience and interact with augmented content. The collaborative design movement exemplifies a transformative vision for public spaces, merging art, technology, and community to foster a richer urban experience. This article explores the Museum of Augmented Urban Art's role as a contemporary art movement by analysing its methodology model. Finally, it highlights the significance of *phygital* art dynamics, which are fundamentally rooted in Design for Social Innovation principles.

KEYWORDS

Design for social innovation, urban art, placemaking, interaction design, augmented reality

Introduction

The Museum of Augmented Urban Art (MAUA), originally Museo di Arte Urbana Aumentata in Italian, is an initiative by Bepart. This innovative non-profit movement enriches cities with collaborative phygital (physical + digital) design, motion graphics, and urban art. Since its foundation in 2013, MAUA has produced and installed digital works in urban spaces through participatory design workshops involving local artists, public authorities, and the Bepart team (Bepart, n.d..).

The connection between creator and creation is evident in MAUA's guiding principles: engagement is free, and interaction is accessible via any smart device. Bepart brings this vision to life through MAUA, redesigning public spaces, merging real and digital art, and encouraging reflection on reality. Beyond philosophical discourse, the movement delivers tangible benefits, including fostering cultural tourism and enhancing urban dialogue. Bepart has received numerous awards recognizing its impact, such as *IC Innovazione Culturale* from the Cariplo Foundation, *Courage to Innovate/Digital Award 2017* from the Lombardy Region, and The Media Guru (Fondazione Cariplo, n.d.; MEET Digital Culture Center, 2017).

MAUA seeks to redefine public art, transforming city landscapes into dynamic *phygital*. It is distinguished by its commitment to co-creation, engaging local artists and communities in the artistic process and fostering a shared sense of belonging over public spaces. A core element of MAUA's mission is encouraging community participation through workshops and educational initiatives. The open-air interactive museums in Milan, Turin, Brescia, Palermo, Firenze, and Waterford (Ireland) provide a collaborative space for artists to interact and contribute to the urban environment.

MAUA strengthens social connections and enhances cultural expression by promoting creative exchange and urban revitalization. As cities increasingly integrate art into public life, MAUA remains at the forefront, championing new engagement and interaction models in contemporary urban art.

Context

In the context of the PhD research, *From Smart Cities to Art Cities*, which explores Design for Social Innovation (DSI) collaborative phygital methodologies, the Museum of Augmented Urban Art (MAUA) is one of the case studies of how human-centered design and technology can reshape urban spaces. Both the research and MAUA align with the objectives of the New European Bauhaus, which seeks to: Promote environmental sustainability, inclusion, and aesthetics in all aspects of

life, from product design to public spaces; Inspire and mobilize citizens, businesses, and institutions to build a more sustainable, inclusive, and beautiful future; Support the European Green Deal, the EU Urban Agenda, and the UN Sustainable Development Goals (European Commission, n.d.).

MAUA represents a departure from the traditional *Smart Cities* paradigm, which primarily focuses on efficiency, connectivity, and technological advancements. While the *Smart Cities* model optimizes infrastructure and services, it often overlooks human experience. *Art Cities*, by contrast, embrace a humanistic approach, merging technology with urban art (UA) to foster social engagement and cultural enrichment. By integrating augmented reality (AR) with UA, MAUA redefines public spaces, prioritizing social interaction, inclusivity, and artistic expression. Rather than viewing technology as solely functional, *Art Cities* leverage digital tools to amplify creative, participatory urban environments that resonate with communities.

MAUA is a case study applying DSI principles, demonstrating how design, technology, and artistic collaboration can drive social innovation. Beyond the design field, MAUA embodies a framework for fostering local identity, self-expression, and resilience. Through workshops and participatory initiatives, the museum cultivates a sense of belonging and empowers communities to engage with their surroundings in transformative ways.

Moreover, MAUA's approach to DSI extends beyond localized interventions—it operates on an iterative, replicable model that can scale to diverse urban contexts worldwide. By adapting its methodologies to different cities, MAUA presents a blueprint for incorporating digital and artistic elements into urban spaces while maintaining cultural relevance.

The central tension in this discussion is the balance between technological innovation and social impact. The Smart City paradigm prioritizes digital connectivity and automation, whereas *Art Cities* advocate for a more holistic, human-centered vision of urban life. MAUA exemplifies this shift, showcasing how AR and UA can create inclusive, aesthetically enriched city landscapes that celebrate local identity and collective experiences.

Urban landscapes are deeply intertwined with people's daily lives. Individuals walk through city streets, experience the temperature shifts, and interact with neighbors, workers, and familiar local figures. These daily exchanges contribute to the socio-ecological system that shapes urban spaces and influences human experiences. As critical components of sustainable urban development, urban landscapes integrate social structures and environmental elements to enhance physical and cultural connectivity (Cilliers, S., Cilliers, J., Lubbe, R., & Siebert, S., 2013).

Public art plays a crucial role in these dynamic, enriching cityscapes while reinforcing cultural identity and fostering inclusivity (Sharp, J., Pollock, V., & Paddison, R., 2005). Art-driven initiatives, particularly those leveraging emerging technologies, can transform neglected urban areas into vibrant,

participatory cultural hubs that drive urban revitalization (Sharp et al., 2005). However, integrating augmented reality (AR) into urban public art presents new opportunities and challenges, raising questions about how technology-driven artistic expressions influence urban spaces and community engagement.

A key research question and hypothesis emerge: How can integrating augmented reality (AR) into public urban art reshape citizens' engagement with their surroundings, fostering a deeper connection and sense of ownership over public spaces? AR-based public art enhances urban landscapes by creating immersive experiences that strengthen local identity. By engaging with digital overlays in physical spaces, citizens develop a heightened sense of participation, transforming urban areas into interactive cultural platforms. This study situates its inquiry within the broader Design for Social Innovation (DSI) framework. It examines how urban art methodologies, participatory design, and technological advancements can collaboratively shape sustainable, human-centered urban environments. By exploring the role of co-creation and transdisciplinary collaboration within the MAUA framework, the research aims to provide insights into how public art can contribute to social innovation, cultural engagement, and urban resilience.

Literature review

The The MAUA represents a pioneering intersection of digital technology, UA, and social innovation. Blending physical and digital elements creates dynamic spaces that foster community engagement and cultural expression. The literature review synthesizes key DSI, UA, and AR works, offering a theoretical foundation for understanding MAUA's methodology.

Design for social innovation, co-creation, and participatory design

Participatory design is central to MAUA's methodology and has been widely discussed in design literature. Ezio Manzini (2015), in *Design, When Everybody Designs*, emphasizes how design processes can democratize creativity and foster social innovation. His work on DSI offers essential insights into how design can be used for community empowerment, an approach that MAUA embraces through its workshops and collaborative art processes.

Tendayi Viki and Franco L. Scimeca (2020) further expand on DSI by exploring how collaborative design processes can align with local needs, amplify voices, and activate social change—principles that align closely with MAUA's ethos of engaging local artists and communities in shaping their own artistic and cultural spaces. Penny Hagen and Gerard A. Keegan

(2019) explore the intersection of design, technology, and community and highlight the role of co-creation in contemporary design practices. Their work underscores the importance of ensuring that community members are not merely recipients of art or technology but active participants in its creation. This participatory model is central to MAUA's success in fostering a sense of ownership and agency among local populations.

Ezio Manzini addresses the concept of "enabling platforms" in *Design, When Everybody Designs: An Introduction to Design for Social Innovation*, emphasizing the importance of fostering collaborative environments conducive to social innovation. He states: "Enabling platforms are systems that support social innovation by creating the conditions for a diverse range of actors to interact and co-create, thus facilitating solutions that respond to social needs" (Gummerus et al., 2021).

This definition encapsulates Manzini's perspective on how enabling platforms operate within design and social innovation. He argues that these platforms empower users and stakeholders by providing the necessary structures for collaboration. The concept allows communities to reclaim and redefine their environments, producing solutions rooted in their lived experiences. The MAUA embodies this principle as an enabling platform for digital-urban artistic collaborations. Through its participatory workshops, MAUA provides local artists and citizens with technological and creative resources—such as AR tools—that enable them to co-create interactive public artworks. Much like Manzini's enabling platform, MAUA does not dictate a singular artistic vision; instead, it fosters an open-ended framework where communities actively shape the cultural identity of their cities. By blending *phygital* elements with a co-designed methodology, MAUA exemplifies how enabling platforms in DSI can transform urban spaces into dynamic, participatory arenas of expression.

Urban art, place-making, and public space

UA has long been a tool for social and political expression. Early scholars like Henry Giroux (2003), in his examination of public spaces as sites of resistance, laid the groundwork for understanding the role of art in cities as a form of social commentary. Giroux's work on cultural politics and public pedagogy is instrumental in framing art as a reaction to and an agent of social change. In the context of public space, Claire Bishop (2012) emphasizes the evolving role of participatory art practices, arguing that public art should be seen not as a static installation but as a dynamic space for engagement and dialogue. Bishop's critique on the aesthetics and ethics of participatory art provides a foundational framework for understanding MAUA's approach to involving communities in creating and interacting with art.

Building on this, Lorna Burns and Annick Schramme (2014) explore the role of art in urban regeneration, underscoring the potential of art to reshape public spaces and local identities. Their insights offer critical theoretical underpinnings for how MAUA's *phygital* approach navigates urban landscapes, leveraging public art for cultural engagement and urban revitalization.

With its distinct visual expressions integrated into urban environments, UA plays a crucial role in placemaking. This multidisciplinary design approach focuses on transforming public spaces to enhance community engagement, cultural expression, and social interaction. UA contributes to transforming and revitalizing spaces that foster a sense of belonging by creating murals, art installations, and artistic interventions. It can redefine a place's identity and perception, promoting social cohesion and urban vitality (Ashley, 2018).

Digital technology and augmented reality in urban art

Integrating digital technology, particularly AR, into public art spaces is an emerging trend. Contemporary scholars have examined the impact of AR in redefining how we engage with urban environments. In their work on interactive art and technology, Milica Mormann and Herre van Oostendorp (2017) argue that AR can transform static public art into a participatory, immersive experience, allowing the viewer to co-create the artwork. This perspective is critical in understanding MAUA's approach, which recruits AR to create *phygital* interactions that blur the boundaries between the real and the virtual.

Mitchel Resnick's (2017) work on learning through digital technologies in creative contexts further supports the role of digital media in fostering engagement and learning. His approach emphasizes how digital platforms, particularly interactive ones like AR, enable people to explore, create, and collaborate, a principle that is evident in the MAUA workshops and community-driven initiatives.

Katerina Fotopoulou (2021) also explores AR as a tool for urban renewal and social change, investigating how AR in public spaces can foster new forms of engagement, activism, and community-based art. MAUA's concept of *phygital* art—integrating physical and digital elements—resonates with contemporary discussions on the role of technology in the future of cities. Saskia Sassen (2019) examines how technology redefines urban spaces, offering new ways to understand and interact with public environments. Sassen's emphasis on the role of technology in transforming cities into more inclusive, creative spaces supports the MAUA initiative, which uses AR to transform traditional UA into a more interactive, accessible form.

Moreover, Shannon Mattern (2020) explores the concept of smart cities and how digital technologies are increasingly embedded in urban

infrastructures. Her work on how technology mediates the relationship between people and urban spaces aligns with MAUA's *phygital* approach, which seeks to redefine public spaces by integrating digital technologies that enhance social interaction, community engagement, and cultural expression.

MAUA as a contemporary art movement

The work of Gerard Byrne (2021) and David Joselit (2020) provides essential insights into the evolving role of contemporary art movements, especially those that intersect with digital media. Joselit's analysis of art and digital culture highlights how artists and art institutions leverage digital tools to redefine public art in the 21st century. As seen in MAUA, the concept of resistance through art draws on these ideas by using innovative technologies to create art and challenge traditional power structures in the art world and urban planning.

This bibliographic review establishes the theoretical foundation for MAUA's approach to DSI, urban placemaking, and digital public art. The interdisciplinary integration of participatory design, technological advancements, and cultural engagement illustrates how *phygital* art can transform urban landscapes. MAUA exemplifies a contemporary model in which public spaces are redefined through collaborative artistic practices, fostering inclusivity, social resilience, and immersive community experiences. By bridging foundational research with emerging digital methodologies, MAUA presents a compelling case study in the evolving discourse of public art and urban transformation.

MAUA immersive experience

In the origin of Bepart and, consequently, MAUA, there are three founding partners with diverse backgrounds and a convergent purpose: social impact. Giovanni Franchina, Joris Jaccarino, and Jacopo Jaccarino are the founders who conceived and implemented MAUA´s interactive process still today and led the MAUA´s workshop in Firenze in November 2024, opening the experience to researcher immersion.

MAUA´S initiative sought to transform public spaces into interactive art galleries where visitors could engage with their surroundings in novel ways. The integration of AR technology was particularly significant as it enabled a dynamic interaction between viewers and the artworks, enhancing the UA experience beyond mere observation.

A user-oriented design approach was adopted to develop the *phygital* paste-up city interface. Paste-up is a method of art installation where paper—often printed or hand-drawn—images and text are adhered to walls or surfaces. This involved a comprehensive research process, target group identification,

and iterative design to enhance user engagement. Collaborating with user experience (UX) and AR experts ensured that interface interactions were meaningful and immersive. The design aimed to capture users' attention and spark their curiosity, ultimately fostering a deeper connection between visitors and the artworks displayed in urban settings.

Designing for social innovation through augmented reality and urban art

In the context of the PhD research, Art Cities initiatives workflow should reassemble technology, art, and social impact by focusing on three interconnected domains: (1) the use of technology (AR) as a tool for amplifying perception, (2) the integration of art (UA) as a means of fostering collective imaginary and public participation, and (3) the overarching design principles that guide these innovations, led by DSI. These domains are embedded in three different moments. The following graphic represents the MAUA and other initiatives processes, moments, and milestones (Figure 1).

The Bepart App is a tool that consolidates MAUA´s project collections. By installing the app, users can activate collective AR UA, find the spot, and open the camera through the app (Figure 2).

Below (Figures 3–6), a journey graphic sequence accompanying the 4-day agenda embodies the spirit of participatory design and the collaborative ethos central to this journey. Through a thoughtfully structured timeline,
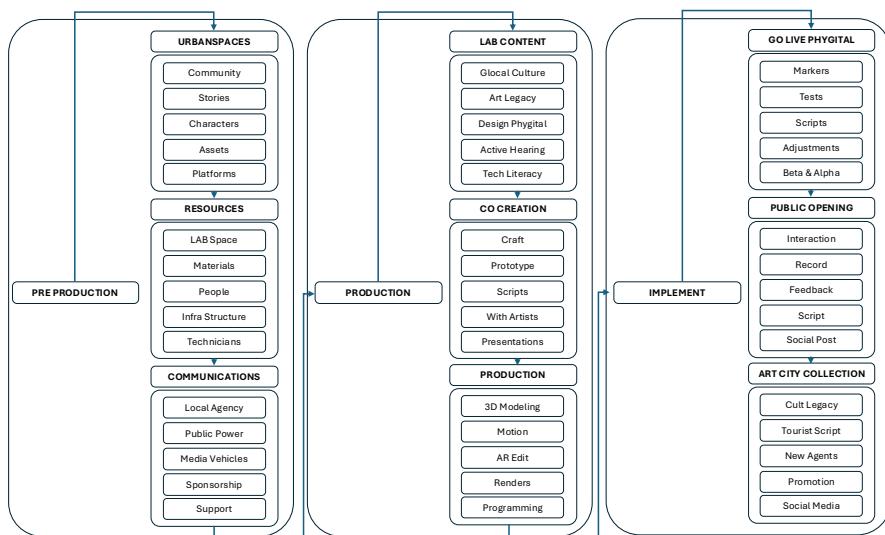

Figure 1 – Three moments on bringing domains to life.

Figure 2 – Three steps to interact with MAUA.

each day's activities are depicted with imagery and interconnected themes that reflect the dynamic interplay between community, technology, and artistic innovation.

The opening: immersion

Day 1 provides technical and conceptual sessions that immerse participants in UA and AR technologies. Visuals of collaborative workshops and city inventories symbolize integrating diverse perspectives. The milestones emphasize co-creation, featuring urban artists, augmented art forms, and immersive brainstorming to establish a shared vision. The day dynamics is essentially the start of MAUAs co-design spirit and principles.
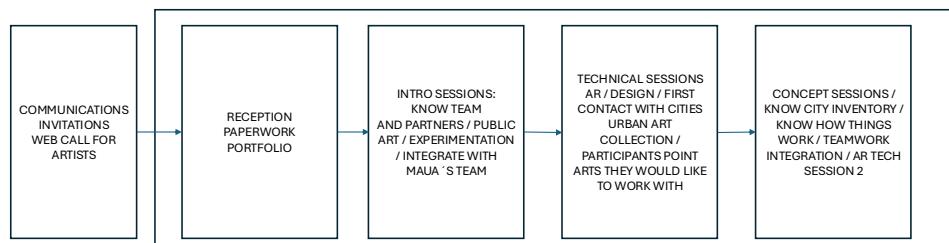

Figure 3 – MAUA day 1.

The day after: collaboration

Day 2 focuses on the creative synergy between original urban artists and participants. Graphics portraying collab sessions and project presentations highlight the participatory approach, enabling feedback loops and iterative development. These interactions are underpinned by the principle of mutual learning and participatory design as a vehicle for democratizing creativity.
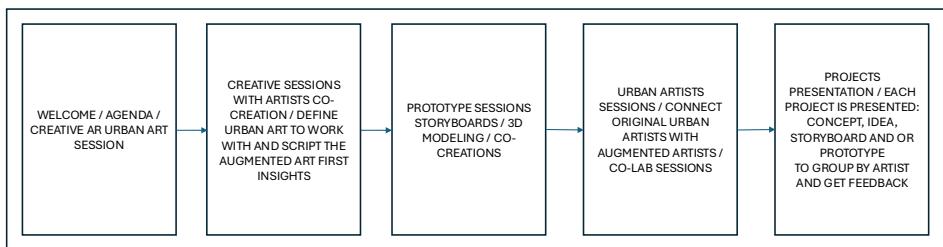
Figure 4 – MAUA day 2.

Third day: prototyping and editing

Day 3 moved to hands-on prototyping and testing, illustrated by 3D modeling, animation, and sound design scenes. Including software editor modules and marker fine-tuning signifies the collaborative refinement process, where community input directly informs technical outputs. This stage reflects the iterative co-design methodology, which emphasizes adaptability and inclusion.
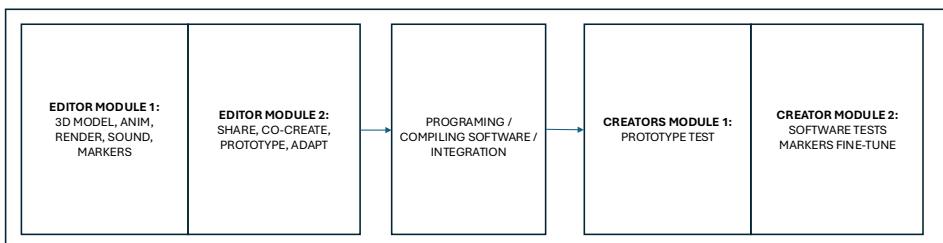

Figure 5 – MAUA day 3.

Exhibition day: go live

Day 4 culminates in the community art city interaction public exhibit, visualized as an open-air celebration of shared efforts. The graphics encapsulate the participatory spirit, portraying creator, participant, and broader community interactions. The exhibit embodies Manzini's vision of design as a catalyst for "enabling solutions" that strengthen the social fabric through collective action. Manzini, Ezio. "Design, When Everybody Designs: An Introduction to Design for Social Innovation." Cambridge, MA: MIT Press, 2015. In this publication, Manzini discusses the role of design in facilitating collaborative practices and empowering communities. On page 22, he states: "Design acts as a catalyst for change, enabling diverse stakeholders to come together and co-create solutions that address critical social issues while reinforcing community bonds".

The presentations leverage bold, interconnected visuals and a participatory framework to narrate a journey of collaboration and

| PUBLISH 1: GO LIVE OPEN-AIR INTERNAL | PUBLISH 2: FINE-TUNE | COMMUNITY COMMUNICATIONS | EXHIBIT: COMMUNITY ART CITIES INTERACTION |
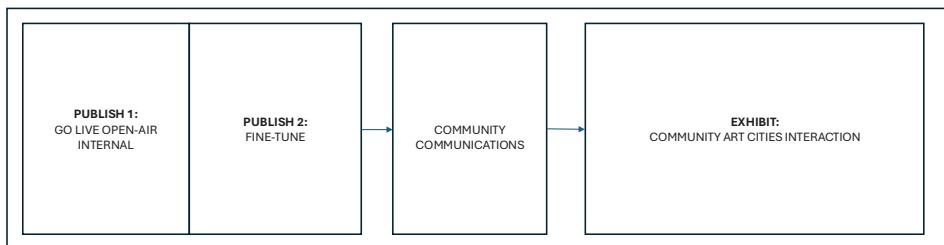
Figure 6 – MAUA day 4.

creativity rooted in the design principles for social innovation. It invites stakeholders to see themselves as active agents in the co-creation process, emphasizing shared ownership and collective impact. Below is a sequence of pictures to illustrate the experience milestones (Figure 7).

Interviews with founders, artists, and community participants were essential to this research. The ethnographic methodology helps understand the dynamics underpinning the MAUA movement. With its immersive, contextually rich, and empathic approach, ethnography is particularly suited to unpacking the complexities of MAUA's transdisciplinary design methodology. Building on foundational works in design ethnography, such as those by Blomberg et al. (1993) and Fetterman (2010), this study utilises an approach that captures participant experiences while deciphering patterns and themes that inform generative design research (Gianni, 2018).


Figure 7 – MAUA journey illustrated in 12 steps.

Fieldwork focused on the MAUA Firenze workshop held in November 2024, where in-depth, semi-structured interviews were conducted with key stakeholders. These included the founders—Giovanni Franchina, Joris Jaccarino, and Jacopo Jaccarino—and participating artists and community members. The founders offered insights into the strategic vision and adaptive methodologies that underpin MAUA. Meanwhile, artists and participants shared their perspectives on collaboration, creative expression, and integrating AR technology in UA.

The interviews highlighted MAUA's innovative multidisciplinary approach:

High Sense of Purpose and Resilience: Founders and participants emphasized the collective mission of redefining public spaces through art and technology. The resilience required to navigate challenges such as dealing with city authorities or finding, contacting, and motivating the engagement of local partners is emerging as a defining characteristic of the MAUA´s attitude. Past cases, especially those in Milan, are endorsed as portfolio cases that bring authority to conversations and make the project concrete to important interlocutors unfamiliar with contemporary language.

Adaptability and Technological Integration: The interviews revealed a constant need to adapt artistic and technological frameworks to the unique characteristics of each city, its spaces, and its stakeholders. This adaptability ensures the methodology remains relevant and impactful across diverse urban contexts.

Collaborative Engagement and Commitment: The participatory design workshops fostered teamwork among local artists, community members, and the MAUA team. This collaboration was crucial in cultivating a shared understanding of ownership and commitment to the project's outcomes.

Strategic Planning and Negotiation: The founders highlighted the importance of careful planning and negotiation with local governments, cultural institutions, and private partners. These efforts ensured the integration of AR technology and adhered to regulatory and cultural considerations.

Iterative Methodology: Adapting MAUA's methodology to the specific needs of different cities was identified as a critical factor in its success. This iterative approach allowed continuous learning and refinement, ensuring each project was contextually appropriate and resonant.

The insights gleaned from these interviews contribute to the discourse on DSI by highlighting the importance of ethnography in capturing the lived experiences and collaborative dynamics that drive such initiatives.

Challenges

A significant challenge in implementing MAUA's model is its scalability. While the initiative has demonstrated considerable success in urban contexts, adapting it to diverse cultural and geographical settings presents

complexities that require further investigation. The interplay between local artistic traditions, socio-political dynamics, and technological accessibility raises questions about how the MAUA methodology can maintain relevance across different urban ecosystems.

Another key limitation is ensuring sustainable community engagement. MAUA's participatory nature relies on active involvement from local artists, policymakers, and residents. However, long-term participation can be challenging, especially in areas with limited digital infrastructure or varying interest levels in AR. Addressing this requires more adaptable implementation models, balancing technology-driven artistic interventions with deeply rooted cultural expressions that are meaningful to each locality.

Given its foundation in DSI, the challenge lies in scaling co-designed representations while preserving the initiative's original spirit and ensuring that each adaptation of MAUA remains an authentic reflection of local identity and social dynamics, essential to avoiding homogenization in UA interventions. Future research must explore iterative strategies for replication, allowing communities to shape the methodology in ways that maintain its core values while adapting to different urban realities.

Conclusions

The MAUA exemplifies urban spaces' transformative potential when approached through a human-centered, participatory lens that integrates art, technology, and social innovation. While *Smart Cities* have streamlined urban functionality, they often overlook the human and cultural dimensions that make cities dynamic and livable. MAUA disrupts this paradigm, re-centering urban development around collective creativity, local identity, and co-created artistic interventions.

By merging *phygital* art with participatory design, MAUA's success demonstrates how urban ecosystems can become inclusive and reflective of their inhabitants. The initiative highlights three fundamental principles in the transition from *Smart Cities* to *Art Cities*: (1) the use of technology as a tool for expanding human perception, (2) the integration of art as a catalyst for collective imagination, and (3) the prioritization of participatory methodologies to ensure inclusivity and relevance.

These principles form a blueprint for reimagining urban spaces as platforms for shared creativity and cultural sustainability. However, scaling this model requires addressing challenges related to long-term community engagement, adaptation to local contexts, and the accessibility of digital tools in different settings. The future of MAUA and similar initiatives lies in developing strategic frameworks that support ongoing collaboration between artists, technologists, and communities.

As cities increasingly look to cultural innovation to foster identity and

connectivity, MAUA is a compelling prototype for reshaping urban environments through interactive artistic engagement. To advance this vision, future research and policy efforts should focus on building adaptable infrastructures that allow *phygital* art methodologies to thrive across diverse contexts. This requires expanding interdisciplinary collaborations, investing in accessible digital tools, and developing sustainable models for artistic participation. The challenge is ensuring that urban spaces remain technologically optimized and culturally enriched, serving as living canvases for collective imagination and transformation.

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REFERENCES

Ashley, C. (2018). Community engagement through urban art: A participatory approach. *Journal of Urban Design, 23*(4), 456–472.

Bepart. (n.d.-a). *About us. Bepart.* January 27, 2025, from https://bepart.net/en/about-us/

Bepart. (n.d.-b). *MAUA Museum of Augmented Urban Art. Bepart.* Retrieved January 27, 2025, from https://bepart.net/en/projects/maua-museum-of-augmented-urban-art/

Bishop, C. (2006). *Participation: After the shock*. MIT Press.

Bishop, C. (2012). *Artificial hells: Participatory art and the politics of spectatorship*. Verso.

Blomberg, J., Burrell, M., & Guest, G. (1993). An ethnographic approach to design. In D. Schuler & A. Namioka (Eds.), *Participatory design: Principles and practices* (pp. 123–155). https://doi.org/10.1201/9781315237417-7

Burns, L., & Schramme, A. (2014). *Art and urban regeneration: A critical review*. Routledge.

Cilliers, S., Cilliers, J., Lubbe, R., & Siebert, S. (2013). Urban landscapes and sustainable cities. In R. M. Niemelä (Ed.), *Urban ecology* (pp. 491–504). Springer.

Egerer, M., Fouch, N., Anderson, E. G., & Clarke, M. (2020). Socio-ecological connectivity differs in magnitude and direction across urban landscapes. *Scientific Reports, 10*, Article 61230. https://doi.org/10.1038/s41598-020-61230-9

European Commission. (n.d.). *New European Bauhaus*. January 27, 2025, from https://europa.eu/new-european-bauhaus/index_en

Fetterman, D. M. (2010). *Ethnography: Step-by-step* (3rd ed.). SAGE Publications.

Fotopoulou, K. (2021). *Augmented reality and urban art: Transforming public spaces*. Springer.

Giroux, H. A. (1994). *Disturbing pleasures: Power and resistance in public spaces*. Routledge.

Giroux, H. A. (2003). *Public spaces, private lives: Beyond the culture of cynicism*. Rowman & Littlefield.

Grammarly. (n.d.). *Grammarly: AI-powered writing assistant*. Retrieved January 27, 2025, from https://www.grammarly.com/

Green, J. (2020). Urban art and placemaking: Transforming public spaces. *Urban Studies Journal, 57*, 567–582.

Hagen, P., & Keegan, G. A. (2019a). Co-creation and the role of technology in community engagement. *International Journal of Design, 13*(1), 123–135.

Hagen, P., & Keegan, G. A. (2019b). Collaborative design for social impact. *Design Studies Journal*.

Joselit, D. (2020a). *Heritage and debt: Art in globalization*. MIT Press.

Joselit, D. (2020b). *Art and digital culture: The new age of public art*. MIT Press.

Manzini, E. (2015). *Design, when everybody designs: An introduction to design for social innovation*. MIT Press.

Mattern, S. (2020). A city is not a computer: Other urban intelligence. *Urban Studies, 57*(11), 2283–2298.

MEET Digital Culture Center. (2017, July 28). *Digital Award 2017 focused on Fashion and Design*. MEET. Retrieved January 27, 2025, from https://www.meetcenter.it/en/digital-award-2017-focused-fashion-design/

Mormann, M., & van Oostendorp, H. (2017). Interactive art and technology: Transforming public art into participatory, immersive experiences. *Journal of Interactive Media, 22*(3), 45-60.

Resnick, M. (2017). *Lifelong Kindergarten: Cultivating creativity through projects, passions, peers, and play*. MIT Press.

OpenAI. (2023). *ChatGPT* (version 4) [Large language model]. OpenAI. https://chat.openai.com/

Sassen, S. (2019). *Expulsions: Brutality and complexity in the global economy*. Harvard University Press.

Sassen, S. (2019). New frontiers facing urban sociology at the millennium. *Urban Studies, 56*(1), 1–19.

Scite. (n.d.). *Scite: Smart citation analysis platform*. Scite. Retrieved January 27, 2025, from https://scite.ai/

Sharp, J., Pollock, V. L., & Paddison, R. (2005). Just art for a just city: Public art and social inclusion in urban regeneration. *Urban Studies, 42*(5-6), 1001-1023. https://doi.org/10.1080/00420980500106963

Storm.ai. (n.d.). *Storm.ai: An AI-driven platform for business insights*. Storm.ai. Retrieved January 27, 2025, from https://storm.ai/

Viki, T., & Scimeca, F. L. (2020). Designing for social innovation: Case studies from the field. *Journal of Design and Social Innovation, 5*(2), 45-62.

Shaping relational engagement with augmented reality

A posthumanist and trauma-sensitive approach to violence reduction inspired by Boal's dramaturgy

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ABSTRACT

This paper discusses a posthumanist and trauma-sensitive framework for violence reduction that draws on Augusto Boal's dramaturgy to co-create an augmented reality (AR) music video with young people in Glasgow, Scotland. In collaboration with music producer Steg G, a group of young men affected by violence, referred to as *The Wise Men*, created a rap expressing their experiences and hopes for the future. This material was developed into an AR music video using digital persona characters to protect their identities while opening new channels for sharing their perspectives. By recasting Boal's concept of mataxis through AR technology, the project invites audiences into relational encounters where digital artefacts, physical environments, and human perception blend to shape situated understanding. Drawing on Edith Stein's phenomenology of empathy and the posthumanist concepts of Karen Barad and Donna Haraway, the analysis demonstrates how audience, technology, and environment become characters in the unfolding experience, highlighting AR's potential for nurturing empathy while respecting boundaries between self and other. The project positions audience engagement as a process of co-becoming within an assemblage of people, technologies, and spaces. The insights contribute to advancing socially engaged applications of immersive technologies in trauma-sensitive contexts. By combining performative art, participatory methodology, and immersive technology, this approach offers new possibilities for creative expression, relational understanding, and youth engagement within violence reduction initiatives, exploring the transformative potential of storytelling and the role of emerging technologies in shaping encounters for social change.

KEYWORDS

Augmented reality, boal dramaturgy, violence reduction, trauma-sensitive, posthumanist

Introduction

In recent years, Glasgow has transformed from the "murder capital of Europe" to a model for violence reduction through strategies centred on prevention and public health. Despite a significant decrease in violent crime since 2006/2007 (Fraser & Gillon, 2024), young people's voices remain underrepresented in policy and public narratives, with their lived experiences often overlooked.

This paper introduces *Our Streets, Our Stories*, a practice-based research project combining participatory design, augmented reality (AR), and trauma-sensitive methods to understand and communicate the experiences of young people affected by violence. In collaboration with music producer Steg G and a group of young men known as *The Wise Men*, the project produced a rap and prototype AR music video exploring themes of lived realities and hopes for the future. These outputs form part of *Resources of Hope*, a suite of interactive materials designed to facilitate discussions about violence.

Drawing on concepts from trauma-sensitive practice, Forum Theatre, and posthumanist theory, the project invites audiences into a relational encounter with the young people's stories through embodied engagement with digital artefacts and physical environments. The paper reflects on the aesthetic, ethical, and methodological dimensions of the AR music video development and potential for audience engagement, contributing insights on posthumanist design, trauma-informed participation, and immersive technologies in socially engaged practice.

Theoretical framework

This project draws upon three intersecting theoretical domains: Boal's emancipatory dramaturgy, trauma-informed participatory design, and posthumanist perspectives on relational meaning-making. Together, these frameworks support a co-creative approach sensitive to power dynamics, ethical considerations, and the more-than-human aspects of participatory storytelling. The following section outlines how these perspectives informed the project's conceptual foundation, shaped its methodological approach and guided our reflections on its potential to influence audience experience and social understanding.

Boal's dramaturgy and the aesthetics of engagement

This project draws foundational inspiration from Augusto Boal's Theatre of the Oppressed (1979), particularly his concept of mataxis, which describes the capacity to shift perspectives or "step into someone else's shoes" (Boal, 1979, p. 9). While Boal's Forum Theatre positions audiences as spect-actors, active agents in shaping the unfolding performance,

this project focuses on the audience's relational understanding by inviting perceptual shifts. The current iteration of the AR music video invites audiences to experience it from multiple perspectives but not for direct audience intervention in the narrative. Instead, Boal's notion of mataxis is more immediately useful, offering a framework to explore how layered digital experiences can invite affective perspective-shifting and embodied empathy.

Mataxis in this context operates through the interplay of digital persona characters, motion-captured gestures, and augmented audio-visual overlays within physical space. The resulting experience encourages reflection and relational understanding, even without physical narrative co-authorship. The AR format enables a hybridised form of conceptual engagement, inviting the audience to move with and around the digital manifestation of the young participants' stories, potentially creating an affective sense of co-presence that echoes Boal's intention to dissolve barriers between performer and observer. This blending of realities implies the audience's emergent agency to influence both the artistic experience and the social realities it represents. The AR music video thus becomes a medium for conceptual engagement, provoking the audience to re-examine their role and potential for enacting change in the world.

Trauma-informed design and empathic engagement

Central to the project's methodology is a trauma-sensitive framework that foregrounds emotional safety, choice and collaboration. Rooted in Scotland's national ambition to become a trauma-informed country (Scottish Government, 2021), the approach responds to the specific needs of young people with lived experience of violence, uncertainty, and systemic exclusion.

To support this, we draw on Edith Stein's (2012) phenomenological perspective on empathy, which moves beyond oversimplified notions of emotional identification. Rather than "seeing through the eyes of another" or "walking in their shoes", which risks assuming an equivalence of experience, Stein proposes empathy as a stance of being alongside the other. This orientation acknowledges the irreducible difference between self and others while inviting meaningful, embodied engagement and care. In the context of this project, this distinction is important. While Boal's concept of mataxis evokes perspectival shifts, Stein reminds us that we must not presume full access to the lived reality of another, especially in contexts marked by trauma, stigma, and unequal power.

Accordingly, the project frames mataxis not as a claim to understanding but as an invitation to co-inhabit in a reflective space that invites an affective, partial, and relational awareness of others' experiences. This space is scaffolded through co-creative processes of play and improvisation,

which support the development of what Arao and Clemens (2013) call "safe and brave spaces." Participants can explore difficult emotions, values, and imagined futures in such spaces through narrative and performance without exposing their autobiographical vulnerabilities.

This ethic of care was enacted using stylised digital personas, inviting creative expression while exercising emotional distancing. These characters invited participants to explore and shape speculative representations of experience while protecting their identities and reducing the risk of re-traumatisation. Relational empathy is cultivated through attentiveness, respect, and co-presence. This approach aligns with trauma-informed practice and the ethics of posthumanist design (Morrison & Stewart, 2024).

This theoretical framework integrates Boal's dramaturgy, trauma-informed design principles, and posthumanist perspectives to provide a solid conceptual foundation for the project's creative methodology and outcomes. By combining participatory applied theatre techniques, AR technology, and relational meaning-making, the project aims to advance trauma-sensitive, socially engaged design research and practice in the context of violence reduction and youth emancipation.

Posthumanist perspectives on assemblage and intra-action

Extending beyond traditional human-centred approaches, the project is also situated within a posthumanist theoretical framework that reconceives agency, identity, and meaning-making as distributed across human and non-human constituents. Drawing on Karen Barad's (2007) concept of intra-action, we understand phenomena not as pre-existing entities coming into contact but as emergent and dynamic through entangled, co-constitutive relationships.

Audience engagement in the AR experience moves beyond passive observation to intra-action, a situated event shaped by the interplay between digital artefacts, physical space, technological mediation, and embodied perception. This relational dynamic echoes Donna Haraway's (2016) concept of sympoiesis, or "making-with," which positions knowledge production and affective response as processes of co-becoming within more-than-human assemblages.

By understanding the audience, the technology, the environment, and the narrative traces of the participants as elements in a performative assemblage, we shift the analytic focus to that of relationships. This perspective invites us to consider how digital artefacts actively shape and are shaped by the conditions under which meaning emerges. The AR music video thus becomes an interface for engaging with latent experiences and emotional realities, inviting new modes of sensing, relating, and reflecting in the context of violence reduction and youth expression.

This theoretical framework integrates Boal's dramaturgy, trauma-informed design principles, and posthumanist perspectives to provide a conceptual foundation for the project's creative methodology and outcomes. Subsequent sections will discuss the co-creative process of applying these principles to practice, the project outcomes, and future research and practice implications.

Co-creating 'our streets, our stories'

This section outlines the collaborative process behind the development of the AR music video, foregrounding the creative methods and relational considerations that shaped the project. Rather than presenting a linear production pipeline, the narrative reflects the textured, iterative nature of co-creation, in which participants, technologies, and environments shape one another in dynamic ways. *Our Streets, Our Stories* emerged as an evolving interface for exploring identity, voice, and perspective within a trauma-sensitive and posthumanist design context.

Collaborative storytelling with The Wise Men

Our Streets, Our Stories forms part of a participatory action research project with Gillon as part of a wider ESRC-funded research project (Public Health Youth and Violence Reduction). Creative coproduction occurred over several years with a group of young men in Glasgow, known collectively as *The Wise Men*, and researcher Gillon. One of the activities the group wanted to undertake was making music, so funded through a UKRI impact acceleration account (IAA), *The Wise Men* worked with music producer Steg G to explore personal and collective themes related to violence, survival, place, and aspiration. These conversations were scaffolded through informal workshops encouraging storytelling, rhythm, and improvisation.

Working with Steg G, *The Wise Men* composed a rap that voiced their reflections on life in the streets and imagined futures. The lyrical process was participatory and improvisational, shaped by shared references, humour, emotional resonance, and peer listening. The rap, once recorded, became the audio spine of the project, a trace of the young men's perspectives expressed through rhythm, tone, and tempo.

Rather than representing themselves directly on screen, the group collaboratively developed stylised digital personas to embody their stories. These avatars were generated using Ready Player Me, a cross-platform avatar tool that enabled each participant to design a character aligned with their self-image or imagined self. The avatars became speculative vessels, offering expressive possibilities while maintaining emotional safety and anonymity.

Crafting the AR experience

Augmented Reality (AR) is a technology that overlays digital content onto the physical environment, creating a hybrid space where viewers can engage with virtual elements through their smartphones or tablets. Unlike virtual reality, which immerses users in a fully digital world, AR preserves the viewer's connection to their real-world surroundings. In this project, AR serves as a trauma-sensitive medium that respects emotional thresholds and supports contextual engagement. Its low barrier to entry and the fact that no headset or specialised equipment is required reinforces the project's emphasis on accessibility, participation, and choice.

The software tools selected, Ready Player Me for avatars, Blender for 3D scene design, Move.ai for motion capture, and Adobe Aero for AR deployment, were chosen not only for their technical compatibility but because they are freely available, enabling ongoing collaboration and creative experimentation throughout the project lifecycle. These authoring environments created a scaffold for relational meaning-making where participants remained involved across the project's trajectory, including the first public demonstration of the piece at a youth participation network event in Glasgow, where one of *The Wise Men* was present.

The AR scene's visual and narrative arc mirrors the rap lyrics' themes, which speak to feelings of entrapment, stress, and the longing for change. The lyrics reflect a tension between cyclical violence and a desire for a different kind of life "same shit every day," "trying not to carry a knife," and "hoping I can change one day." These themes informed the spatial and temporal structure of the AR experience, which unfolds within a stylised "Neo-Glasgow" environment, a speculative future cityscape infused with markers of local identity, such as a street stall displaying Irn-Bru bottles and a Steg G poster.

The experience begins with the avatars projected in 2D on a virtual screen, echoing a sense of objectification and constraint, how it can feel to be watched, categorised, or misunderstood. As the rap unfolds, the performers emerge from the screen into 3D space, materialising around the viewer as embodied digital figures. This transition from flat representation to augmented embodiment draws inspiration from the iconic visual transformation in *A-ha's Take On Me* music video (1984). It gestures toward a break from imposed frames and invites audiences into a more immersive relational encounter.

The motion of the avatars was generated using Move.ai, which represents the participants' full-body gestures via video recorded on mobile devices. This unobtrusive, sensor-free method prioritised emotional safety and responsiveness to the inclusive energy of the sessions. The resulting motion data was used to animate the avatars performing the rap in sync with the original audio. See Figure 1 of the Move AI interface montaged alongside the rigged Ready Player Me Avatars in Blender.
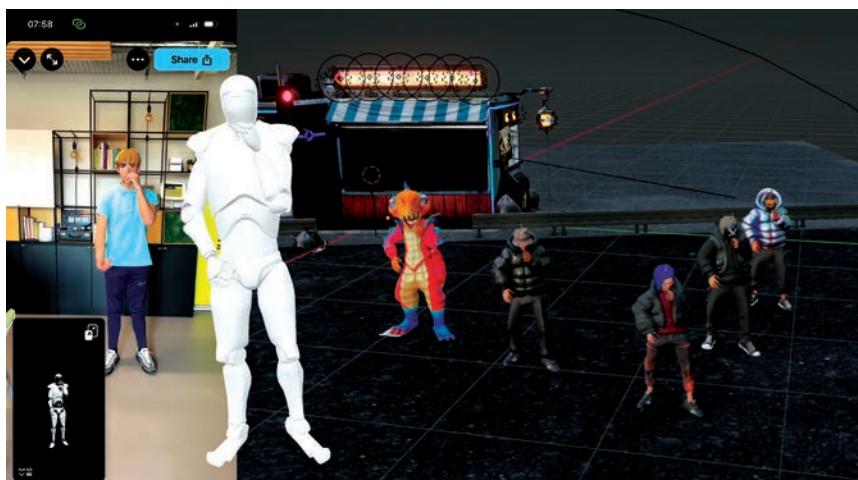
Figure 1 – Move AI Interface Alongside Rigged Ready Player Me Avatars in Blender.

Figure 2 – The Adobe Aero Interface Visualising the AR Music Video in a Physical Environment.

The animated digital assets from Blender were then combined with the music in Adobe Aero, a free and mobile-based AR authoring environment. The digital avatars appear in the environment Rather than directing the viewer along a prescribed path, the experience opens a reflective field in which audience members can encounter the avatars from multiple angles, moving through and with the performance. This openness respects individual pacing and interpretation, which is aligned with the relational philosophical commitments of Stein, Boal, and Barad, as discussed earlier (See Figure 2 for an illustration of the AR prototype as experienced through Adobe Aero, where the digital performance is spatially anchored within the viewer's real-world surroundings).
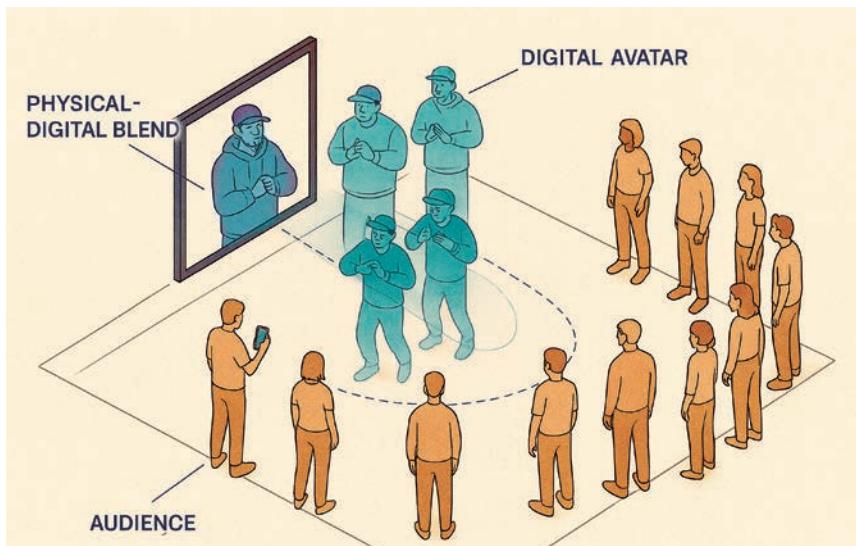
Figure 3 – Top-down schematic of the AR Audience Experience Showing Digital-Physical Blending and Audience Engagement.

Aesthetic and ethical considerations

Throughout the project, attention was given to creating conditions that respected emotional thresholds and nurtured control in the hands of the participants. The use of avatars and stylised representations was a generative factor that supported speculative engagement while reducing the risk of re-traumatisation. The wise men could choose how to represent themselves, what aspects of experience to foreground or withhold, and how their narratives would be shared in the final artefact.

The project's underpinning values manifest in the AR prototype's creative form that embraces abstraction, stylisation, and symbolism as part of a considered aesthetic. These decisions reflect a commitment to playful, co-creative expression as a situated practice of identity construction, world-making and relational understanding. Creativity here is a celebrated process of making-with, shaped by attunement, emotional safety, and collective exploration. The AR experience continues this participative philosophy, where the audience experience is approached as a dynamic relational encounter, where meaning emerges generatively through intra-action.

The resulting *Our Streets, Our Stories* prototype AR music video was demonstrated at an event organised by Staf (Scottish Throughcare and Aftercare Forum) for youth participation practitioners. It is planned for future installation in the Kelvingrove Museum in Glasgow. It will be accessible via the wider toolkit *Resources of Hope*, which will be hosted on the Scottish Centre for Crime and Justice Research (SCCJR website). These contexts support the work's longer-term aim, which is to create

relation spaces where stories from young people affected by violence are shared as part of an unfolding conversation about listening, power, and social transformation. (See Figure 3 for a schematic illustration of the audience experience, depicting how viewers move around the emerging digital avatars within a shared physical space, highlighting the relational dynamics and spatial interaction of the AR encounter).

Discussion

This section critically draws on firsthand observations and reflections to explore the *Our Streets, Our Stories* AR music video prototype as an evolving relational site of co-becoming. The discussions are grounded in the theoretical framework, foregrounding how the AR experience encourages relational and situated practices rather than fixed outcomes.

Relational engagement and the possibilities of mataxis

Boal's concept of metaxis offered a generative lens for exploring perceptual shifts rather than a model for direct audience intervention. While Forum Theatre's spect-actor encourages narrative co-authorship, this project reframed participation as affective engagement rooted in attunement and relational reflection. The AR music video prototype invites audiences to move with and around the avatars in the physical environment, encountering lyrical tensions while spatial sound intensity changes based on the viewer's proximity to the digital avatars.

I In this way, mataxis was reinterpreted not as a claim to understand another's experience by occupying their shoes but as an invitation to walk alongside, encouraging a situated, relational awareness (Stein, 2012). The spatial and sonic layering of narrative and the choreography of emergence from 2D projection to embodied 3D presence invite a perceptual shift from passively watching to being with and alongside, aligning the technological medium, participatory method, and conceptual message.

Metaxis, in both the forum theatre play and the digital piece, represents a rational way of rehearsing change in the real world. By encouraging critical awareness of the audience's emergent agency for change, these experiences aimed to bridge the gap between the artistic representation and the audience's agential potential to enact a transformation in their own lives and communities.

Trauma-sensitive design as relational method

In enacting the trauma-sensitive principles, the project foregrounded safety, choice, and co-creation across all stages, including the aesthetic encounter. The use of digital personas and the generative nature of the

scene were all shaped by and respect these values. Arguably, as is the case with Boals' dramaturgy, there is also an emancipatory dimension to the experience of the project for both *The Wise Men* and the audience through the development of new skills for wise men and new relational understanding for the audience.

The AR scene challenged linear narratives and predefined emotional arcs, holding space for multiple readings and engagements that mirrored the collaborative workshops and echoed Haraway's (2016) concept of sympoiesis, or "making-with," positioning knowledge production and affective response as processes of co-becoming within more-than-human assemblages. Audience members could approach, retreat, or pause in response, reframing interactivity as response-ability, aligning with Barad's (2007) ethico-onto-epistemological framing.

Assemblages of meaning-making
Technology as co-performer

Reflecting on the posthuman dimensions of the theoretical framework, the project explores the dynamic configuration of human and non-human constituents. The avatars, audio, physical space, mobile devices, and viewer movements are not instantiations of the story; they are the fabric of its unfolding. Meaning emerges through intra-action, where gesture, rhythm, attention, and environment converge in an affective event. Compared to conventional Forum Theatre, the digital medium introduces new ways of being, knowing, and relating throughout the project's realisation. The technology helps scaffold a trauma-sensitive process that remains responsive to emotional pacing, creating a protective distance while sustaining expressive presence.

The AR scene's choreography, where avatars transition from 2D projections to 3D performance, mirrors the lyrical movement from constraint and objectification toward hope. This visual movement is inherently relational, inviting audiences to choose how to engage. As one audience member reflected at the youth participation event in Glasgow, "It was visceral. When I moved and saw myself in the song with the rappers, it felt like a new way of seeing." This sentiment is echoed by Gillion, who reflected, "...When they jump off the screen and into the 'real world' that got me, it symbolised a leap they are out in the worlds forging their own identities.'"

The digital format carries the potential for wider dissemination across classrooms, museums, and community settings that would be difficult to achieve with traditional forum theatre while retaining a sense of immediacy and offering access to stories often overlooked in public discourse. However, using AR technologies can introduce barriers to accessibility and raise important questions about authorship,

representation, and digital literacy. These tensions call for continued reflexivity and dialogue. While the experience does not claim to replace the co-presence of live performance, it embraces Boal's values of relational transformation in new contexts of encounter.

Conclusion

This paper has explored the development of a prototype augmented reality (AR) music video co-created with young people in Glasgow as part of a wider violence reduction initiative. Grounded in a trauma-sensitive and posthumanist framework, the project drew on Boal's concept of mataxis, Edith Stein's ethics of empathic proximity, and posthumanist philosophy to shape both process and outcome. Across each stage, from participatory lyric writing and digital persona development to spatial design and public demonstration, care was taken to attune to relational and ethical considerations, avoiding extractive or overly representational modes of engagement.

The project contributes to evolving design research in several ways. First, it repositions audience experience as a form of situated, relational knowing, emerging through co-presence rather than narrative control. Second, it extends Boal's dramaturgical strategies into a cross-media, augmented context, where mataxis operates through spatial movement, digital layering, and a posthumanist, generative co-becoming. Third, it offers a case study in trauma-sensitive co-creation that integrates accessible, open-source authoring environments to invite collaborative experimentation across design, youth work, and creative practice.

While the AR music video remains at an early stage of public engagement, having so far been demoed in a practitioner setting, its future installation at the Kelvingrove Museum opens new possibilities for understanding how such work is received and interpreted across diverse public audiences. Rather than positioning the piece as a vehicle for behaviour change, its value lies in its capacity to support reflective, affective encounters, which can reshape how stories of marginalised youth are developed, held, heard, and responded to.

This work invites continued exploration into the role of emergent technologies in co-creating reparative and responsive platforms for storytelling. Future developments may include expanded interactivity, longitudinal feedback, and deeper dialogue between participants, audiences, and environments. What remains central, however, is the commitment to co-creating conditions for listening, meaning-making, and relational engagement, valuing, playful being and knowing that hold space for complexity, care, and the possibilities of becoming otherwise.

Future projects will explore the affective and transformative potential of ambiguous spaces of co-becoming, where meaning is negotiated

and identities are fluid. These liminal realms can reshape narratives and challenge societal norms, treating uncertainty not as an antagonistic force to be resolved but as a catalyst necessary for emergence and relational meaning-making through playful co-creation. *The Wise Men* aspire for their co-created resources to centre young people's experiences, transform discussions, and inspire youth engagement in coproduction activities celebrating their voices and talents. They continue collaborating with Gillon to share their stories and experiences creatively.

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REFERENCES

Arao, B., & Clemens, K. (2013). From safe spaces to brave spaces: A new way to frame dialogue around diversity and social justice. In L. Landreman (Ed.), *The art of effective facilitation: Reflections from social justice educators* (pp. 135–150). Stylus Publishing.

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Boal, A. (1979). *Theatre of the oppressed*. Pluto Press.

Fraser, A., & Gillon, F. (2024). *The Glasgow Miracle: Storytelling, violence reduction and public policy*. University of Glasgow / ESRC. https://doi.org/10.1177/13624806231208432

Haraway, D. J. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.

Morrison, J., & Stewart, F. (2024) The Aesthetics of Listening: Material-Discursive Exploration of Verbatim Testimony and Augmented Reality. *Proceedings of the Cumulus Budapest 2024 Conference– P/REFERENCES OF DESIGN*. In Press.

Scottish Government. (2021). *Trauma-informed practice toolkit Scotland*. https://www.gov.scot/publications/trauma-informed-practice-toolkit-scotland/

Stein, E. (2012). *On the problem of empathy* (W. Stein, Trans.; 3rd rev. ed.). ICS Publications. (Original work published 1917)

The design assemblage

Co-designing events with humans, things and earth others

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ABSTRACT

This paper critically maps the movement of social design, highlighting its limitations in creating sustainable transformation despite its recognized value in facilitating participatory processes. Drawing on posthuman assemblage theory, it explores decentering approaches to expand our understanding of "the social" beyond expert and human centred frameworks in social design. Through a socially engaged art project that preserves the memory of a demolished neighbourhood, and a Manual for active citizenship that is a card game, it explores the concepts of "becoming-earth" and "becoming-machine" to illustrate how posthuman assemblages can enrich social design practices and discourse. Adopting a posthuman perspective widens the sense of who designs and who matters to *designing while expands* the practice to broader political concerns and responsibilities. The paper intends to argue that social design's transformative potential lies in recognizing interdependency and the diverse agencies of all participants—human and non-human alike. This reconceptualization offers pathways to more inclusive, effective, and ethically grounded design practices that acknowledge the complexity of social forms and relationships. Furthermore, addressing a Portuguese audience, it reclaims design as a fluid profession where different political and ethical expressions are always and already possible.

KEYWORDS

Social design, posthuman, co-design, decentering, social forms

Introduction

Social design is characterized by the coming together of diverse participants to design collective change. Current debates highlight its limitations in creating sustainable transformations, despite recognized value in facilitating socially democratic processes.

Acknowledging a particular human orientation in social design, that does not account for more-than-human worlds, the goal of this paper is to expand the notion of the social in social design.

Through a posthuman approach to the concept of assemblage, the paper explores a broader conceptualization of the collective involved in designing and the implications it has for the practice.

The methodological approach is ethnographically grounded (Muller, 2021). The first part presents a theoretical review, mapping a set of crucial ideas and debates about social design setting the background for the second part which mobilizes episodes from a social design practice, to reimagine the social in social design. Being a participant in the cases, the analysis explores the grammar and patterns in which a posthuman assemblages' perspective affects purpose, form, scale and effects of social design.

The paper results in a critical view of the social turn, intervening in the discourse of social design, unfolding recommendations for future research.

The posthuman assemblage

Deleuze and Guattarri's (2013) concept of assemblage is based on the idea of multiplicities, which have no principle of unity or division, and similar to rhizomes are made of lines without structure, center, hierarchy, defined by a "circulation of states" (p. 22). An assemblage is "the abstract line" through which multiplicities change in nature and connect with other multiplicites (p. 7-8). Exploring narratives where people, animals and machines connect, Deleuze and Guattarri argue that an assemblage is not a static or fixed grouping, but a dynamic event of "becoming" that relates multiplicities together. For the authors, "becoming" does not refer to a state of resemblance, imitation, or identification, nor does it represent progression or regression. To "become" is an association in alliance, symbiose or communication.

The concept of the posthuman developed by Rosi Braidotti (2013) is based on Deleuze and Guatarri's thinking. Taking a post-anthropocentric stance, Braidotti aims to overcome historical bias of a universal, superior and separate entity of the human, towards an expanded understanding of becoming human, that always and already embeds and embodies inseparably and relationally other multiplicities (Braidotti, 2013). For the author, a human is an assemblage, that is, a transversal mesh, of entangled people, things and beings, whose subjectivity is "internally differentiated".

Therefore, the posthuman is a multiplicity of participants and relationships between these participants, meaning that what constitutes a subject is not limited to an individual, but assembles a multiplicity of entities and forces with and beyond the human. The notion of subjectivity as an assemblage, from Braidoti's perspective, is related to the idea of becoming. Becoming in Braidoti's perspective means expansion and becoming-another, as assemblages can generate social forms of subjectivity. In their becoming, posthuman subjectivities traverse and interconnect multiple subjects and agencies "from interiority to exteriority and everything in between." (2013, p. 92). But before this can happen, it's important to acknowledge what Braidotti (2013, p. 91) addresses as the "immanence of relations" is a key aspect of her posthuman concept. It argues that nothing is isolated or self-contained, but rather always and already constituted through interactions and connections with others and the world. These immanent relations are not secondary or accidental but essential to the constitution of any being. In this view, the concept of the immanence of relations supports an ethics of interdependent relationality, that is possible through immanent personal, material and physical relationality of existing. In this sense, through interdependence, the author explores processes of "becoming-earth" and "becoming-machine" as two instances that capture important dimensions of the phenomenon. Through these concepts, the author argues more clearly that there is no subjectivity without relationships, nor do relationships materialize without subjectivities that give them form. This is where the universal and essentialist idea of the human is contradicted, and where posthuman intersubjectivities become revealed.

Mapping social design

Back to the 1960s, practitioners in Architecture, Advertising, and Industrial Design called for a shift in design's priorities, away from commercial and industrial purposes, towards real world situations (Buckminster Fuller, 1998; Garland, 1967; Papanek, 2005). Design was understood as the planning and patterning of actions between humans with their environment to transform existing situations into preferred and desired ones (Papanek, 2005; Simon, 1996). Influenced by emergent developmental agendas at a global scale (Clarke, 2021), a first generation of social designers develops initiatives in response to more urgent and relevant issues in contexts of social and economic vulnerability (Veiga & Almendra, 2014; Tromp & Vial, 2022).

The complexity of the situations tackled, as termed by Rittel and Webber in 1973 as "wicked problems", required propound immersion and interdisciplinary collaboration (Shedroff, 2009). Pelle Ehn and colleagues in Scandinavia, pioneered the development of "Participatory Design" where different actors participate in design decisions to ensure solutions

are based on their actual experience (Ehn & Badham, 2002; Ehn, 2008). Reclaiming democracy as a value, the "collective designer" described designer/user cooperation (Ehn & Badham, 2002).

Throughout the 1980s and 1990s, several communities and organisations participate in different stages of design processes where the notion of co-design emerges (Sanders & Stappers, 2008). However, debates arise regarding the increasing prevalence of superficial and neo-colonial practices, in which designers act more like saviors than collaborators (Stairs, 2009; Sachetti, 2011).

In this view, Victor and Sylvia Margolin (2002) propose a "social model of design", to address social problems and support marginalized communities through an "ecological perspective" that approaches situations from the perspective that family, community and systemic relations structure a richer and denser understanding of personal needs and desires (Margolin & Margolin, 2002). Elisabeth Sanders and Peter Jan Stappers, (2013) developed a convivial framework for co-design, based on generative sessions that foster creative and emotional confidence in participants to say, do and make things from their subjective experiences and knowledges.

During the 2000s, calls for more robust ethical frameworks also result in the emergence of several terms: 'Design for Social Change', 'Design for Social Impact', 'Transformation Design', 'Design for Social Innovation', 'Social Impact Design', 'Socially responsible Design', 'Humanitarian design' and 'Social Design' (Veiga & Almendra, 2014). A growing discourse around social change by design, leads to recognizing that designing is not a neutral activity (Mazé & Ericsson, 2011).

From 2010 to 2020, the discourse shifts from designing solutions to designing participations (Lee, 2007; Sanders & Stappers, 2013). The work of Ezio Manzini (2015; 2016) marks this turn, articulating a supporting role of expert designers in relation to creative communities already making promising social innovations for sustainability. Manzini's theory that everybody designs clarified aspects of form, scale and outcomes, establishing that socially engaged design is problem-solving but also, mainly, collective sense making. The co-design process, argued Manzini (2015), is a social learning process, where the focal point of the encounters and conversations that happen between participants is relevance, rather than causality or logic (Manzini, 2015; Berger, 2018). In this view, the social is not something to fix but something to come to terms with, involving personal understandings in relation to the 'other' (Boelen & Kaethler, 2020). The concept of "coalitions" later comes to define the "social forms" that can flourish from processes which able to generate a cohesive and motivated community, mobilizing power and resources to making things happen (Manzini, 2017).

Designing participations implies that social design becomes a socio-political event wherein the relational dynamics of collaboration are

of paramount importance. Debates centered on the politics of social design acknowledged the importance of recognizing relationships of power, risk, and responsibility in processes where resources and influence are unevenly distributed (Mazé, 2014; Keshvarz & Mazé, 2013; Huybretches, et al 2014).

Focusing on the relationships that emerge within the events and spaces of social design, some designers emphasize a political and civic responsibility to create democratic arenas for diverse imaginaries to have a voice (Binder et al, 2015; Di Salvo, 2022; Huybretches et al, 2021). For some designers, design agency is socio-material, in the sense that designing is a process in which humans and non-humans design things together on equal terms (Binder et al, 2011; 2015)

No longer determined by publics - vulnerable or marginalized - social design expands its scope addressing micro situations through participatory processes that focus on collective sense making and making things happen (Manzini, 2015; Koskinen & Hush, 2016; Markussen, 2017). Armstrong et al (2014, p.15) argue social design is not precisely a field but "a set of concepts and activities that exist across many fields of application including local and central government and policy areas such as healthcare and international development."

Despite recognized value in facilitating participatory processes, current debates point to weaknesses and risks that social designers present in establishing good relationships and partnerships with experts in other fields and communities (Mulgan, 2014; Fayard & Fathallah, 2024; Tjahja & Yee, 2022). There are limitations in implementing transformations, struggles with continuity due to a dependency on the designers, and difficulties in translating the language of design and design to other languages (Mulgan, 2014; Fayard & Fathallah, 2024; Tjahja & Yee, 2022; Koskinen and Hush, 2016; Markussen, 2017; Julier & Kimbell, 2019). Some have argued that social design should assume a responsive, rather than transformative role, to become grounded and responsible (Thorpe & Gamman, 2011; Mareis & Paim, 2021). Others that its minor scale restricts more relevant and impactful transformations (Koskinen & Hush, 2016; Markussen, 2017).

In contemporary discussions designers call attention to the harmful effects that have been caused by neglecting pluriversal worlds, life experiences and designerly ways of thinking and doing (Janzer & Winestein, 2014; Costanza-Chock, 2020; Tunstall, 2023; Escobar, 2018). Community-driven processes aim to challenge oppression through "decolonial" and "design justice" approaches (Tunstall, 2023; Costanza-Chock, 2020), arguing that its by becoming situated that it may be possible to co-design for, with and by pluriversal entities and knowledges, overcoming historical, geographic social and cultural biases.

Towards a design assemblage

Reading social design through assemblages, points to two perspectives. The first regarding **form and scale** of social designing. Social design creates assemblages through a spatial view of the designing event as "composition" that associates issues, things and subjectivities to make things together (Gentes, 2017). Design is a process where a tangible unknown is explored, and relevance is negotiated. Therefore, according to Gentes (2017), it becomes a "poetical space of expansion" which causes to entangle and emerge other and new issues, things, subjectivities, forces and entities, to participate as the process unfolds. Focusing on "becoming", the second perspective looks at the **purposes** of social design driving the processes, and what is produced and enacted through the intersubjective gestures and actions of all participants (Veiga, 2020), seeing the **effects** of what becomes social design. Despite the slicing, the four dimensions of purpose, form, scale and effects intermingle with both perspectives. To clarify each view, the concepts of BECOMING-EARTH and BECOMING-MACHINE are used as metaphors, and two socially engaged art and design processes guide the reflection to illustrate and explore a posthuman thinking for social design.

Becoming-earth

Becoming-earth refers to an immanent relationship between humans and trees that unfolded along 40 years in the neighbourhood Quinta da Vitória in Portela, Loures, Portugal. Trees were companions and sources in the lives of the people, who cared for them and depended on things they obtained from them. In 2012, during the neighborhood's demolition process, the trees emerged conspicuously in their being-in-the-world (Figure 1). The ongoing presence of the visual artist Sofia Borges in the neighbourhood at the time, sparked the becoming of an artistic project. What if trees can survive and maintain Quinta da Vitória's memory alive? Trees are living selves, that represent themselves as what they are, and can represent others, for instance 'their owners', and all the interdependent and intersubjective practices they performed together. The local council with a team of gardeners comes to collect the trees and transplant them a new place (Figure 2). The arrival in a new garden, however, renders them invisible among all the other trees already existing in place. Then, ceramic sign plates are installed in the garden to identify each tree as a former Quinta da Vitória's inhabitant (Figure 3). Marking the becoming-trees of Quinta da Vitória in the new garden, marks the survival of the trees and the becoming of a neighbourhood anew.

In the debates about **form**, social design is mainly framed as a socio-political event among humans where a "materialist reading

Figure 1 – The Loquat tree rise in the midst of debris. © Sofia Borges, www.jardinsdavitoria.pt

Figure 2 – Transplanting the Peepal tree. © Sofia Borges, 2012, www.jardinsdavitoria.pt

Figure 3 – Sign plates identify trees. © Inês Veiga, 2014 www.jardinsdavitoria.pt

of social design" conceives matter as fundamental mediator within conversations, actively involved in shaping social interactions and establishing human relations (Sanders & Sttepers, 2013; Manzini, 2017; Boelen & Kaethler, 2020). According to Alvarado (2024), relationality is a term that, so far, has been appropriated by designers to explore how relationships between people are enabled and mediated by artifacts, or how relationships enable the act of designing between specific actors, but not so much to describe complex interrelationships and social forms in design.

Taking a posthuman perspective, participatory designers have been acknowledging the role of objects, machines, animals and earth others in design processes (Jönsson, 2015; Akama et al, 2020). The example demonstrates some of their findings and insights.

The way in which the event of designing unfolds, as organizational structure and decision making, is based on interdependency among people and more-than-humans. It is an assemblage that speaks of survival and forms through "intimate kinds of relations" where trees and dwellers, trees and gardeners, and trees and the sign plates become part of each other in co-influence and co-existence (Akama et al, 2020, p. 5). Li Jönsson (2015) describes these social processes as design events "made up of different parts that come together, impossible to define by one entity. [...] we cannot encounter objects or subjects by themselves, but always in processes of formation that are hybrid and mix and meld a human/non-human mingling." (p. 197-198) Becoming-earth fosters a broader sense of "who" matters to designing.

Taking a posthuman perspective, the design assemblage also indicates situations of becoming "*alter-native*", a concept developed by Martin Ávila (2022) to describe artefacts' relations to environments and beings. The ceramic plates produce an alterity, through foreignness, that makes a difference in the garden. They frame possibilities and opportunities for the trees so they engage and are adopted by the assemblage (idem). The same "alter-native" becoming happens to the trees when they emerge extra-ordinarily amid debris. But trees as selves qualify as earth-others and it reveals another insight. According to Ann Light (2019, p.29), "the very concept of participation presupposes there is something going on beyond you to which you can be invited. Exploding the center produces a counter-concept of already-being-with". Assuming the trees from an already-being-with relationship, unfolds an artistic project based on integrity, where trees maintain their being as selves, while art respects and cares for their participation in the project from their subjective alterity (Light, 2019). It would have been a very different artistic project if the trees would have become pictures in a book, taken as beyond, left in the demolished neighborhood. In this view, Becoming-earth acknowledges a "vital web of complex interrelations" that bind entities to multiple other entities as a way to introduce a radically immanent planetary dimension. To decenter the social in social design, Akama et al (2020) remind us that designing futures with and for others is ethically tangled and scaled. Regarding scale, acknowledging that even the smallest particular event always and already involves a wider social multiplicity, of people, artifacts and living things, opens the micro frame of social designing. Becoming-earth makes visible an assemblage that expands through spatial compositions, as Quinta da Vitória neighbourhood is alive through posthuman intersubjectivity.

Becoming-machine

The Local Development Manual is a card game that engages participants in playing and negotiating actions and methods in response to a common goal. The game has been implemented in diverse settings, and

regardless of social, economic or political background, every participant has accessed and played the manual without difficulties. However, there was a significant absence in these forums. Blind and deaf people had never played the Manual and were unable to do so due to inherent limitations in the tool's design. Acknowledging an accessibility gap, a coalition with three organisations named 'Forum for all' gathered around the common goal of redesigning the Manual. The co-design process resulted on a hybrid prototype that combines analogue and digital features. The cards have a slightly larger format and incorporate braille printing to translate titles and refer to the card's colour. The content of the cards was translated into Portuguese Sign Language (LGP) and accessed via a QR code printed on the cards (Figure 4). This QR also allows the contents to be audio-described using smartphone screen reader apps and other accessibility features (Figure 5).

Social problems are multiplicities of entangled contradictory issues that spark heterogeneous publics into being with multiple experiences in relation to them (Di Salvo, 2022). Authors argue that if issues are inherently social, then either designing everyday objects or designing participations, design is always social (Boelen & Kaethler, 2020; Koskinen & Hush, 2016).

Social design can be interpreted as the manifestation of a broad social movement that has taken place over time. A movement in which the assemblage of visions, calls to friction and organized acts to alter how are structured, have changed multiple planes of Design education, research and professional settings (Escobar et al, 2024).

Becoming-machine is an alert to understand how always-participating-with-many is ongoing. Addressing social issues as a **purpose**, can be seen as a practice of decentring the traditional matters of interest and care for what constitute a product, communication and spatial design process and outcomes i.e. the social turn (Veiga, 2020). But, as contemporary social designers argue, ignoring, forgetting, erasing, or excluding others, are recurring practices, intentional or not, in social design. It seems we might be missing some of the transformative potentials of the social turn delving into what authors call "ontological slippages" (Escobar et al, 2024, p. 91), some manifested through an inability to grasp a larger millieu of 'who, what and how' designs and makes a difference in designing. Therefore, social design should reflect a shift where the social makes a difference.

Thinking through collective assemblages, contributed to reverse designing, thereby critically appreciating the kinds of artifacts we design, and the kinds of participations we must redesign (Akama et al, 2020). Acknowledging design processes as always and already social, should reflect similar awareness of the **effects** of our work. The purpose of transforming the manual into an accessible game, enabled a plural tangle of subjectivities, experiences and relations already-being-with to become rightfully acknowledged (Figure 6).

Figure 4 – Prototype testing with ACSA - Associação Cultural de Surdos da Amadora. © Locals Approach

Figure 5 – Prototype testing with ACSA - Associação Cultural de Surdos da Amadora. © Locals Approach

Figure 6 – *The citizen designer is you* sessions with the deaf-blind young children at CED - Centro de Educação e Desenvolvimento António Aurélio da Costa Ferreira, Casa Pia de Lisboa. © Locals Approach

Becoming-machine also reveals posthuman subjectivities, in which QR codes, audio-descriptions and sign language videos, intimately connect with blind and deaf people to form a posthuman player in the game. In this view, acknowledging designerly agency of matter, requires expanded co-responsibility and shared ownership of design processes and achievements. Accessing the contents of the cards and play from a position of integrity and autonomy, is a relational event that both precedes

and constitutes the posthuman player. Regarding the presence of sign language translators to mediate between deaf people and those who can't communicate in sign language, reveals another insight. That actively participating in the design conversations and negotiations that the game now encourages, beyond sensory capabilities, reinforces the ongoingness of always-participating-with-many "shaping new forms of human agencies and consequently constructing new types of collective life" (Jönsson, 2015, p. 105). Acknowledging the subtleties shapes a different how of what becomes the social designing in playing the manual.

Final considerations

Laura Forlano (2017) claims the posthuman is an important concept because it provides an entry-point to decolonize design regarding more-than-human worlds. However, the author argues that precisely because posthumanism unfolds new horizons that designers have not yet been capable of dealing with the concept having much to research and practice. Conceiving the social in social design from a posthuman perspective, in this paper, is an attempt to embrace all that which has been ignored in the thinkings and practices of social design. Becoming social designers through justice and pluralism has been a political activation that needs further capacities to overturn dominant assemblages. Throughout the making of this paper several paths for future research revealed, namely: i) to deepen the posthumanist perspective within the field of design, and especially in social design; ii) to research how we can contribute to improve sensibility and literacy towards otherness, relationality, and pluriversal social forms; iii) to contribute to the conceptualization of Design, in the continuous updating of its discourses, practices and imaginaries.

REFERENCES

Alvarado, A. (2024) Relationality in design: What can be understood? In: *Design Research Society Conference (DRS) 2024*, Boston, USA.

Akama, Y., Light, A. & Kamihira, T. (2020) Expanding Participation to Design with More-Than-Human Concerns. In: *Participatory Design Conference (PDC) 2020,* Manizales, Colombia.

Armstrong, L., Kimbell, L., Julier, G., Bailey, J. (2014). *Social Design Futures Report.* University of Brighton and Victoria and Albert Museum, UK.

Ávila, M. (2022). *Designing for Interdependence: A Poetics of Relating.* Bloomsbury Publishing.

Boelen, J., Kaethler, M. (eds.) (2020). *Social Matter and Social Design: for good or bad all design is social.* Valiz.

Braidotti, R. (2013). *The Posthuman.* Politi.

Berger, E., (2018). Rendre la critique créative. La démarche abductive et pragmatique du design. *Perspectives critiques et approches inductives, 4*(2): 109–132. doi:10.7202/1043433ar

Binder, T., Brandt, E., Ehn, P., Halse, J. (2015). Democratic design experiments: between parliament and laboratory. *CoDesign,* 11[3-4]: 152-165.

Binder, T., De Michelis, G., Ehn, P., Jacucci, G., Linde, P., Wagner, I. (2011). *Design Things.* The MIT Press.

Buckminster Fuller R. (1998). *Manual de Intruções para a Nave Espacial Terra.* Via Ótima.

Clarke, A. (2021) Design for the real world: Contesting the Origins of the Social in Design. In Mareis, C. & Paim, N. (eds.), *Design Struggles: Intersecting Histories, Pedagogies, and Perspectives.* Valiz. 2021.

Costanza-Chock, S. (2020). *Design Justice: Community-Led Practices to Build the Worlds We Need.* The MIT Press.

Deleuze, G., Guattari, F. (2013) *Thousand Plateaus.* Bloomsbury Publishing.

DiSalvo, C. (2022) *Design as democratic inquiry: putting experimental civics into practice.* The MIT Press.

Ehn, P. (2008) Participation in design things. In: PDC 2008, Bloomington, Indiana, USA. 92–101.

Ehn, P. & Badham, R. (2002) Participatory Design and the Collective Designer. PDC 2002. 1–10.

Escobar, A. (2018) *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds.* Duke University Press.

Escobar, A., Osterweil, M., Sharma, K. (2024) *Relationality: An Emergent Politics of Life Beyond the Human.* Bloomsbury Publishing.

Fayard, A-L., Fathallah, S. (2023). Design Thinking Misses the Mark. *Stanford Social Innovation Review,* 22[1]: 28–35.

Forlano, L. (2017). Posthumanism and Design. *She Ji: The Journal of Design, Economics, and Innovation,* 3[1]: 16-29.

Garland, K. (1964). First Things First Manifesto. Goodwin Press. Available at: web.archive.org/web/20070707024112/http://www.kengarland.co.uk/KG%20

published%20writing/

Gentes, A. (2019). *The In-Discipline of Design: Bridging the Gap Between Humanities and Engineering*. Springer.

Huybrechts, L., Devisch, O., Tassinari, V. (eds.), (2021). Re-Framing the Politics of Design. Public Space.

Huybrechts, L. (ed.) (2014). *Participation is Risky: Approaches to Joint Creative Processes*. Amsterdam: Valiz.

Janzer, C.L., Weinstein, L.R. (2014). Social Design and Neocolonialism. *Design and Culture*, 6: 327-343.

Jönsson, L. (2015). *Design Events: On explorations of a non-anthropocentric framework in design*. Ph.d. Dissertation, The Royal Danish Academy of Fine Arts.

Julier, G., Kimbell, L. (2019). Keeping the System Going: Social Design and the Reproduction of Inequalities in Neoliberal Times. *Design Issues*, 35[4]: 12–22.

Keshavarz, M., Mazé, R. (2013) Design and Dissensus: Framing and Staging Participation in Design Research. *Design Philosophy Papers,* 11[1]: 7-29.

Koskinen, I., Hush, G. (2016). Utopian, Molecular and Sociological Social Design. *International Journal of Design,* 10[1]: 65–71.

Light, A. (2019) Design and Social Innovation at the Margins: Finding and Making Cultures of Plurality. *Design and Culture,* 11[1]: 13-35.

Manzini, E. (2017). Designing coalitions: Design for social forms in a fluid world. *Strategic Design Research Journal,* 10[2]: 187-193.

Manzini, E. (2015). *Design, When Everybody Designs: An Introduction to Design for Social Innovation*. The MIT Press.

Margolin, V., Margolin, S., 2002. A "Social Model" of Design: Issues of Practice and Research. *Design Issues*, 18[4]: 24-30.

Markussen, T. (2017). Disentangling "the social" in social design's engagement with the public realm. *CoDesign*, 13[3]: 160-174. doi: 10.1080/15710882.2017.1355001

Mareis, C., Paim, N. (eds.), 2021. *Design Struggles: Intersecting Histories, Pedagogies, and Perspectives*. Valiz.

Mazé, R. (2014). Our Common Future? Political questions for designing social innovation. In: *DRS 2014*. Umeå, Sweden. 560–572.

Mulgan, G. (2014). *Design in public and social innovation: What works and what could work better*. NESTA. Available at: https://media.nesta.org.uk/documents/design_in_public_and_social_innovation.pdf

Müller, F. (2021). *Design Ethnography: Epistemology and Methodology*. Springer.

Nicenboim, I., Oogjes, D., Biggs, H. & Nam, S. (2025). Decentering Through Design: Bridging Posthuman Theory with More- than-Human Design Practices. *Human–Computer Interaction*, 40[1]: 195-220.

Papanek, V. (2005). *Design for the Real World: Human Ecology and Social Change*. Pantheon Books.

Sanders, E., Stappers, P. (2013). *Convivial Toolbox: Generative Research for the Front End of Design*. BIS Publishers.

Tjahja, C., Yee, J. (2022) Being a sociable designer: reimagining the role of designers in social innovation. *CoDesign*, 18[1]: 135–150.

Thorpe, A., Gamman, L. (2011). Design with society: why socially responsive design is good enough. *CoDesign*, 7[3–4]: 217–230.

Tromp, N., Vial, S. (2023). Five components of social design: A unified framework to support research and practice. *The Design Journal*, 26[2]: 210-228

Tunstall, D. (2023). *Decolonizing Design: A Cultural Justice Guidebook*. The MIT Press.

Simon, H. (1996). *Sciences of the artificial*. The MIT Press.

Shedroff, N. (2009). *Design Is the Problem: The Future of Design Must be Sustainable*. Rosenfeld Media.

Stairs, D., 2009. Arguing With Success. *Design Altruism Project Website*. Available at: https://design-altruism-project.org/2009/09/14/arguing-with-success/

Veiga, I., Almendra, R. (2014). Social Design principles and practices. In: *DRS 2014*. Umeå, Sweden. 572-584

Veiga, I. (2020). *Indiscipline: social design principles and practices, how designers work in this realm*. Ph.d. Dissertation, Universidade de Lisboa Faculdade de Arquitectura. http://hdl.handle.net/10400.5/20260

Cultivating synergy
Studying concepts and design practices for human and more-than-human coexistence

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ABSTRACT

The interaction between Nature and humanity demands a transformative paradigm rooted in collaboration, creativity, and recognising human existence as interconnected with the natural world. This article explores the synergy between living beings by investigating strategies and creative processes to foster coexistence, resilience, and sustainability. The literature review is grounded in the perception and respect for the human and more-than-human world, its politics of relationality, the integration of biodiversity knowledge, and the need to reconceptualise human existence as embedded within, rather than separate from, ecological systems. The paper studies the projects: 1. *Interwoven - Exercises in Rootsystem Domestication* by Diana Scherer; 2. *Microbes Make Mountains* by Laura Maria Gonzalez; and 3. *Full Grown* by Alice and Gavin Munro. The case studies highlight vitality as a quality of contemporary design, and their analysis provides practical pathways for integrating ecological thinking into creative practices. Their approaches challenge reductionist models and advocate for complexity, interdependence, and adaptability. They also promote a holistic vision that incorporates both ecological and social dimensions. Ultimately, the synergy between Nature and humanity calls for a transformative action that reimagine cultural and material practices through a collaborative lens. This article argues that integrating relational and systemic strategies offers pathways for sustainability and fosters a renewed sense of belonging and purpose within a shared ecological web, promoting the flourishing of all beings.

KEYWORDS

Synergy, relationality, human and more-than-human, nature-centered design, design practices

Introduction

The relationship between humanity and Nature necessitates a profound shift in perspective that moves beyond notions of domination and exploitation toward a paradigm grounded in collaboration, reciprocity, and ecological responsibility. Rather than viewing Nature as an external resource to be controlled and extracted for human benefit, this transformative approach acknowledges the deep interdependence between human existence and the more-than-human world. This shift requires embracing a relational ontology, where life is understood not as a collection of isolated entities but as an intricate web of relationships (Capra, 1996).

This paper's research question is: What are the main documented examples and practices that illustrate the creation of synergy between humans and more-than-human entities, as identified in the literature and the analysed case studies? Moreover, what transformative design practices have been identified in the literature and case studies as strategies for promoting coexistence between humans and more-than-human entities? Therefore, it begins by exploring the concepts of synergy, relationality, human and more-than-human, and Nature-centered Design. The literature was reviewed using academic databases such as Scopus, Web of Science, and Google Scholar, and other concepts such as posthumanism, new materialism, multispecies ethnography, indigenous knowledge, relational ontologies, holistic approaches, and interconnectivity were identified. Then it delves into design practices aligned with the knowledge that humans are Nature to search for their tools or procedures.

The cases studied were: 1. *Interwoven - Exercises in Rootsystem Domestication* by Diana Scherer, which explores the intersection between botany, material research, and textiles and the boundary between manufactured and organic; 2. *Microbes Make Mountains* by Laura Maria Gonzalez, which delves into the intersection of biology and geology, microbes and minerals; 3. *Full Grown* by Alice and Gavin Munro, that brings the concept of growing and harvesting time with the boundaries between design and horticulture. Each of them highlights differently livingness and vitality as qualities of contemporary design. Their analysis provides practical pathways for integrating ecological thinking into creative practices.

The projects were selected by a qualitative, theory-driven approach to explore the role of synergy, relationality, and more-than-human perspectives in contemporary design. The chosen cases exemplify livingness and vitality as essential qualities in design practice and provide practical insights for integrating ecological thinking into creative processes. The key criteria were interdisciplinary synergy, ecological integration, relationality and more-than-human perspectives, material experimentation, and practical relevance. Each selected case represents a convergence of multiple fields, demonstrating a holistic approach to materiality and form, and presenting a sustainable, process-driven approach. The projects emphasize non-

human agencies, questioning conventional human-centered design paradigms and challenging traditional material processes, highlighting their dynamic, evolving, and symbiotic qualities. Ultimately, the case studies offer tangible pathways for designers to engage with Nature-centered, slow, and regenerative approaches.

From competition to synergy

The theory of evolution is typically centred on the concepts of competition, natural selection (Darwin, 1859), and the survival of the fittest (Spencer, 1864). Organisms should fight for limited resources, adapt to changing environments, and outdo their rivals to pass their genes on to the next generation. However, evolution is not solely driven by competition; cooperation (Frank, 2003; Nowak, 2006) also plays a vital and often overlooked role in determining species' success.

Anthropologist Margaret Mead, in her book *Cooperation and Competition Among Primitive Peoples* (1937), offers a unique perspective on the concept of cooperation by examining it through a comparative anthropological lens across various primitive societies. She emphasized that cooperation and competition were not simply innate human traits but shaped by cultural factors. By examining diverse societies, she illustrated how different cultures fostered varying degrees of cooperative and competitive behaviours. She is also known for the popular anecdote about the healed femur as a sign of civilization. Although its origin is uncertain, the suggestion that humanity begins when humans consciously choose to care for one another, placing collective well-being above mere individual survival, has been widely circulated (Blumenfeld, 2020).

Several important authors and researchers have supported the idea that human progress is rooted in interdependence, compassion, solidarity, empathy, mutual support, and synergy. Kurt Lewin (1948) stated that a group's essence lies in the interdependence of its members, with changes in one part affecting the whole. Harold Kelley and John Thibaut (1978) introduced the Interdependence Theory, which states that interpersonal relationships are defined through mutual influence and interdependence. Their work emphasises how interactions between individuals shape experiences and outcomes.

Robert Axelrod and William Hamilton, specifically in their book *The Evolution of Cooperation* (1981), use game theory to analyse cooperation. Their research shows that cooperation can arise and be sustained through reciprocity and building trust strategies, highlighting the essential role of interaction in shaping social structures.

More recently, Michael Tomasello et al. (2012) argued that human cooperation evolved through mutualistic collaboration, fostering new skills and motivations for working together. Additionally, Sarah Vap (2019)

examined the interconnections between humans and other species, exploring how we influence each other ecologically, biologically, and culturally. Cooperation can manifest diversely within a single species, such as social bonding, collective defence, and mutual aid. From ants and wolves to primates and humans, they have developed complex social structures where individuals work together for reciprocal benefit, increasing their overall chances of survival and reproduction.

> Mutualistic symbioses offer striking examples such as these: the fungus and alga that compose a lichen; the ants and ant-acacias, where the trees house and feed the ants which, in turn, protect the trees; and the fig wasps and fig tree, where wasps, which are obligate parasites of fig flowers, serve as the tree's sole means of pollination and seed set.

> (Axelrod & Hamilton, 2981, p. 1391)

These cooperative interactions demonstrate that natural selection does not always favour solitary competition; instead, it often rewards behaviours that enhance survival through collaboration, fostering ecological stability and evolutionary success.

From evolutionary cooperation to relationality

The conversation about cooperation in evolutionary theory suggests a broader framework: relationality, a crucial yet often overlooked aspect of interdependence that characterises life at various levels—biological, social, and philosophical.

Relationality, as discussed by Midgley (2001, 2004) and McElwain (2020), emphasises that relationships fundamentally shape existence rather than isolated individualism. Evolution is not solely about survival; it is a-bout survival through connection. This concept of relationality challenges recognises that human existence is shaped by relationships within and beyond human societies, including animals, plants, ecosystems, and even technological and spiritual entities. By acknowledging these relationships, there is a deeper understanding of interdependence.

Indigenous philosophies worldwide have long recognised the interconnectedness of human and non-human worlds (Green, 2021). In many traditions, Nature is not seen merely as a resource but as a network of relatives—trees, rivers, mountains, and animals are regarded as kin rather than objects (Krenak, 2019 and 2020). For example, Kincentric Ecology (Salmon, 2000) shows how Indigenous communities maintain reciprocal relationships with their environments. It frames humans as caretakers rather than conquerors of the land, recognising that relationality involves engaging in ethical responsibilities toward the more-than-human world.

The work of Kimmerer (2013) delves deeper into the relationship between

humans and Nature. She argues that many Indigenous peoples see plants as teachers. For them, harvesting is not merely a one-sided extraction; it involves a reciprocal relationship where humans express gratitude and hold care toward living beings. Scholars like Haraway (2016) and Braidotti (2013) critique anthropocentrism and promote an expanded ethical framework that includes animals, artificial intelligence, and ecological systems. Haraway's idea of companion species emphasises how other beings shape human existence, effectively blurring the boundaries between species. Those perspectives challenge the traditional human/Nature binary.

Acknowledging the intricate relationships between humans and the more-than-human world carries significant ethical implications. The prevailing paradigm of industrial civilisation has focused on extraction, viewing animals, forests, and entire ecosystems merely as resources to be exploited, as an economic commodity rather than a partner in coexistence. Embracing relationality requires a fundamental shift from extraction to care and domination to reciprocity.

Design's role is to create systems that improve life quality, support sustainable living, and restore ecosystems, helping society and the environment flourish together (Thackara, 2005; Fry, 2011; Mau, 2004). The transition is reflected in initiatives prioritising collaboration with natural systems rather than opposing them. The following section focuses on the study of three contemporary approaches that embody relational thinking by valuing biodiversity and promoting long-term sustainability.

Case studies

Interwoven - Exercises in rootsystem domestication by Diana Scherer

Interwoven - Exercises in Rootsystem Domestication is a project by Amsterdam-based artist Diana Scherer that explores the intersection of Art, Science, and Nature. Scherer manipulates plant root systems to create intricate, textile-like patterns, challenging the perception of plant intelligence and human control over Nature (Figure 1).

The project began in 2015 when Scherer started collaborating with biologists to develop a technique for controlling plant root growth. Scherer primarily works with wheat, taking advantage of its fast-growing root system. She uses underground geometric templates to guide the roots, allowing them to weave or braid themselves into artificial tissues, which can take two weeks to a month to complete.

In the Western paradigm, there is an inherent presumption of human superiority over plants, which Giovanni Aloi argues in Scherer's book (2023). Interwoven encourages us to reconsider the complexity of

multispecies relationships and recognize our true interconnectedness, emphasizing that a hierarchical view is dangerous.

> We are today more and more aware that the cultural distance we have created between us and plants is among the leading causes of climate change and environmental degradation. Reconsidering our relationship with plants might be the most important step we take toward revising our detrimental impact on the planet.
>
> (Aloi in Scherer, 2023, p. 57)

The *Interwoven* reciprocal relationship could be explained as Design Practice ↔ Nature Process. The reciprocal relationship in this project is built on the mutual enhancement of both design and ecological processes. Human design practices help to guide plant growth and root systems in a way that benefits both the plants (by creating healthier, more robust root systems) and the environment (by using the plants to restore ecological balance, even though, in many cases, they are harvest at the end to produce an artistic statement). In turn, the plants contribute to the design process by fulfilling natural roles, and when not harvested, they strengthen the soil, regenerate ecosystems, and enhance the aesthetic value of spaces.

Interwoven raises questions about the relationship between humans and Nature. It challenges our understanding of plant biology and offers a unique perspective on the hidden world beneath our feet. By treating roots as a material akin to yarn or textile, Scherer creates a biodesign that blurs the lines between Nature and human intervention, exploring themes of domestication, control, and plant intelligence. By focusing on the often-overlooked underground systems that sustain plant life, the project encourages people to appreciate the complexity and interdependence of natural ecosystems. This leads to a deeper, more mindful relationship with the environment, fostering respect and a desire to protect it.

When teaching communities about the importance of root systems and how they can interact with them, *Interwoven* also proposes educational opportunities that foster a deeper understanding of ecological processes. This knowledge empowers individuals to make informed decisions about using and interacting with land, plants, and the environment, promoting a more sustainable, self-sufficient lifestyle which can inspire a cultural shift towards sustainability and reverence for Nature.

Microbes Make Mountains by Laura Maria Gonzalez

Microbes Make Mountains is a project by Laura Maria Gonzalez, featured in an exhibition at MIT's Keller Gallery in 2023. This interdisciplinary initiative investigates the convergence of architecture, design, and

Figure 1 – *Interwoven* by Diana Scherer with geometric and "natural" template. Available at https://nieuweinstituut.nl/en/projects/new-material-award/diana-scherer (Scherer, 2023, p. 24).

microbiology, emphasizing the ability of microorganisms to generate sustainable building materials.

Gonzalez developed a method for creating biocement using bacteria (Figure 2). By introducing specific bacteria into soil or sand and providing them with a particular formula, she was able to produce crystals that bind the particles together. This process transforms soft materials into hard objects in about a week.

She drew inspiration from natural phenomena like Spain's Rio Tinto and Ethiopia's Danakil Depression, where microbial activity contributed to mineral formations. Her bone-like structures are created by combining various minerals and microbes in interlocking pieces, designed to meet both fabrications need and the microbes' living requirements.

Her research investigates sustainable alternatives to traditional carbon-intensive concrete production, highlighting more eco-friendly approaches to building materials. However, *Microbes Make Mountains* not only demonstrates the potential of biocement as a sustainable building material but it is an invitation to reconsider the role of microorganisms in shaping our world. Through this project, Gonzalez aims to bridge the gap between the microscopic and macroscopic, encouraging a new perspective on the relationship between humans, microbes, and the built environment.

> The name underscores the paradoxical relationship between the microscopic and the macroscopic. It speaks to the profound

idea that processes, no matter how minuscule, can culminate in immense and transformative impacts. On one hand, this suggests the potential scalability of these processes, envisioning a future where they might be used in the construction of buildings. On the other, it reflects the timeless role of these organisms in geology, sculpting our landscapes over vast time scales.

(Gonzalez, 2023)

The *Microbes Make Mountains* reciprocal relationship could be presented as a Nature Process → Design Practice → Nature Process. Microorganisms are already at work in Nature, breaking down organic matter, enriching soil, and contributing to ecological processes like nutrient cycling. The design involves using human innovation to direct microbial activity for ecological restoration. By understanding how microorganisms work in various environments, the design process guides them in ways that optimize their role in regenerating ecosystems. The relationship here is also reciprocal because human design practices are built upon natural processes, but in return, those practices help accelerate and direct those processes toward ecological recovery. The microorganisms benefit from being utilized in a structured, intentional way to achieve specific ecological goals, and the environment gains new life through human intervention that works in harmony with Nature.

The project illustrates the interconnectedness between human communities and the natural world. It focuses on how humans can work with rather than against Nature, using microorganisms as partners in creating sustainable landscapes. It promotes a holistic view of environmental stewardship, where communities are encouraged to adopt sustainable practices that align with natural processes. The project also suggests a shift from traditional, high-tech solutions to environmental problems toward more localized, natural, and accessible techniques.

By using microbes as natural agents for environmental transformation, the project offers creative, low-tech solutions to some pressing challenges posed by climate change, such as soil erosion, loss of biodiversity, desertification, and the degradation of natural environments. This ecological approach encourages others to consider and implement environmental regeneration, fostering a sense of collective responsibility for the planet's health. So, *Microbes Make Mountains* can be an educational tool, an inspiration to learn more about ecology and sustainable practices.

Full Grown by Alice and Gavin Munro

Full Grown is a project founded by Alice and Gavin Munro in 2005 that has revolutionized furniture design by growing trees into functional pieces (Figure 3). Based in Derbyshire, UK, the company creates chairs, sculptures, lamps, mirror frames, and tables using a unique tree-shaping process. The

Figure 2 – Biocemented sculpture prototype coloured with a copper carbonate. Available at https://www.instagram.com/p/Cs1zz3mObUJ/?hl=en&img_index=1

concept originated from Gavin's childhood memory of an overgrown bonsai that resembled a small throne. This inspiration led to the development of a sustainable alternative to traditional furniture production.

The trees are trained to grow over plastic moulds, guided by small plastic clasps (Figures 4). This process takes 4 to 8 years, allowing the wood to thicken and mature before harvesting. By growing furniture directly from trees, Full Grown eliminates wood waste and reduces the carbon footprint associated with traditional manufacturing, offering a Nature-integrated solution.

The *Full Grown* reciprocal relationship could be presented as a Design Practice → Nature Process → Design Practice. The first intention is to manufacture a piece of furniture. The design process involves working with the tree's natural growth pattern, which is a biological and ecological process now harnessed and shaped by design. This relationship is mutually beneficial—Nature (the trees) is guided to grow in a way that produces valuable products, while the trees benefit from careful and deliberate cultivation. The design reduces the need to cut down trees and instead utilizes their growth as a resource.

The pieces blend Nature, Function, and Art, featuring designs inspired by 18th-century Shaker and mid-century Scandinavian styles. The project relies on artistic and ecological principles and involves local craftsmanship

Figure 3 – Full Grown chairs. Available at https://fullgrown.co.uk/

and innovation. It provides an opportunity for local artisans to engage in a new form of sustainable design and empowers them through education and skills development. Moreover, their work combines design, horticulture, and environmental consciousness. It raises awareness of the impact of consumption, encourages mindful consumption and production, and promotes the idea that everyday objects, like furniture, can be grown in an eco-friendly design rather than manufactured through traditional means (extractivism and mass-production).

Synergy as the foundation of a new paradigm

The projects *Interwoven* by Diana Scherer, *Microbes Make Mountains* by Laura Maria Gonzalez, and *Full Grown* by Alice and Gavin Munro illustrate the concept of synergy, particularly in the realm of interdisciplinary collaboration. Each project challenges the boundaries and relies on the cooperation of experts from various disciplines. They also co-create with the natural world, showcasing a synergistic relationship between human creativity and natural growth patterns, merging design with Nature.

Despite being small-scale interventions, all three projects reject a hierarchical and exploitative relationship with Nature. They emphasize cooperation, resilience and adaptation and deeply incorporate an understanding of Nature's inherent systems, processes, and rhythms to unlock regenerative practices. Additionally, they demonstrate true synergy whenever designers work with Nature rather than impose on it, leading to novel solutions that benefit both the environment and society.

This approach goes beyond simple biomimicry to embrace a practice of

co-evolution, where design adapts and evolves alongside environmental forces. The partnership between Nature and humanity demands transformative actions that rethink cultural and material practices. Reciprocity in design can drive innovation and sustainability when recognising the agency of non-human participants. It can also cultivate a renewed sense of belonging and purpose, supporting the survival and prosperity of all beings.

Recognising that human existence is fundamentally interconnected with Nature requires a mindset shift. Humans must understand that climate change, biodiversity loss, and ecosystem collapse are not isolated crises; they are symptoms of a fractured relationship between humans and the environment. To help us, we need to practice the principles of deep ecology and system thinking, especially the ones that emphasise that every action taken impacts the whole.

To address these challenges, we need policies, technologies, and practices that promote synergy and coexistence. It is essential to acknowledge that human well-being is inseparable from planetary health. The future of humanity depends on learning to live in reciprocal relationships. By fostering collaboration, embracing creativity, and recognising interconnection and synergies, we can create a world where ecological and human flourishing support each other.

ACKNOWLEDGEMENTS

REFERENCES

Aloi, G. (2023). Patterns of Human-Vegetal desire. In Scherer, D. (2023). *Interwoven: Exercises in Root System Domestication.* Jap Sam Books.

Axelrod, R., & Hamilton, W. D. (1981). The evolution of cooperation. *Science, 211*(4489), 1390-1396. https://doi.org/10.1126/science.7466396

Blumenfeld, R. (2020). How A 15,000-Year-Old Human Bone could help you through the Coronacrisis. *Forbes.* Retrieved from https://www.forbes.com/sites/remyblumenfeld/2020/03/21/how-a-15000-year-old-human-bone-could-help-you-through-the--coronavirus/

Braidotti, R. (2013). *The Posthuman.* Polity Press.

Capra, F. (1996). *The web of life: A new scientific understanding of living systems.* Anchor Books.

Darwin, C. (1859). *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life.* John Murray.

Frank, S. A. (2003). Repression of competition and the evolution of cooperation. *Evolution*, 57(4), 693-7055.

Fry, T. (2011). *Design as politics.* Berg Publishers.

Gonzalez, L. M. (2023). Interview for Stirpad. Available at https://www.stirpad.com/news/stir-news/microbes-make-mountains-highlights-rousing-links-within-the-microbial-world/ accessed on 3rd February

Gonzalez, L. M. (2023, access February 3 2024). *Microbes make mountains: Highlights rousing links within the microbial world* [Interview]. Stirpad. https://www.stirpad.com/news/stir-news/microbes-make-mountains-highlights-rousing-links-within-the-microbial-world/

Green, J. (2021). *The Anthropocene Reviewed: Essays on a Human-Centered Planet*. Dutton.

Haraway, D. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press.

Hotson, E. (2015). *The man who grows fields full of tables and chairs*. Retrieved from https://www.bbc.com/news/business-32977012

Kelley, H.H. & Thibaut, J.W. (1978). *Interpersonal relations: A theory of interdependence*. Wiley-Interscience.

Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge, and the teachings of plants*. Milkweed Editions.

Krenak, A. (2019). *Ideias para Adiar o Fim do Mundo*. Companhia das Letras.

Krenak, A. (2020). *A vida não é útil*. Companhia das Letras.

Lewin, K. (1948). Resolving social conflicts: Selected papers on group dynamics. Harper & Row.

Mau, B. (2004). *Massive change*. Phaidon Press.

McElwain, G.S. (2020). Relationality in the Thought of Mary Midgley. *Royal Institute of Philosophy Supplement*. 87:235-248. doi:10.1017/S1358246119000225

Mead, M. (1937). *Cooperation and Competition Among Primitive Peoples*. McGraw-Hill Book Company.

Midgley, M. (2001). *Science and Poetry*. Routledge.

Midgley, M. (2004). *The Myths We Live By*. Routledge.

Nowak, M. A. (2006). Five rules for the evolution of cooperation. *Science*, 314(5805), 1560-1563.

Salmón, E. (2000). Kincentric Ecology: Indigenous Perceptions of the Human-Nature Relationship. *Ecological Applications*, 10(5), 1327-1332.

Scherer, D. (2023). *Interwoven: Exercises in Root System Domestication*. Jap Sam Books.

Spencer, Herbert (1864). *Principles of Biology*. Volume 1. Williams and Norgate.

Thackara, J. (2005). *In the bubble: Designing in a complex world*. MIT Press.

Tomasello, M., Melis, A. P., Tennie, C., Wyman, E., & Herrmann, E. (2012). Two Key Steps in the Evolution of Human Cooperation: The Interdependence Hypothesis. *Current Anthropology*, 53(6), 673-692.

Vap, S. (2019). *Winter: Effulgences and Devotions*. Noemi Press.

Who gets to fidget?

Towards a future where fidget devices are accessible for adults with limited hand mobility

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ABSTRACT

Fidgeting and stimming are behaviours commonly used to regulate emotions and maintain focus, particularly among neurodivergent individuals. While fidget devices are widely available, their designs often cater either to children or, when targeted at adults, emphasize discretion and portability, neglecting individuals with limited hand mobility. This paper highlights the significant design gap in the fidget device market for adults with both neurodivergence and motor impairments. Through a multidisciplinary literature review and a comparative product analysis, it identifies key challenges posed by existing designs, including the prioritization of small, discreet forms unsuitable for those with reduced dexterity or limited hand movement. By examining the needs of neurodivergent adults and analysing currently available fidget products, this work proposes essential design criteria for fidget devices that guarantee accessibility to individuals with limited hand mobility or dexterity. Key recommendations include muted colours for professional settings, ergonomic dimensions that enable palm manipulation, quiet operation that allows for unnoticed fidgeting, non-slippery materials, and features that allow smooth, continuous movements with minimal applied force. Addressing these design shortcomings can significantly improve accessibility and usability, ensuring neurodivergent people feel more included in everyday and workplace environments, without further stigmatization from visible stimming. By reimagining fidget devices with inclusivity at the forefront, this paper advocates for tools that accommodate diverse physical and neurodivergent needs.

KEYWORDS

Fidget devices, low mobility, accessibility, inclusive design, ergonomics

Introduction

This work proposes the existence of a design gap in fidget toys that are simultaneously designed for adults and accessible for individuals with low dexterity or impaired hand mobility.

The featured research is part of a wider and more in-depth project, which aims to further address the lack of accessible fidget devices for adults with low manual dexterity and present findings and guidelines that allow future designers to create accessible products from the get-go.

Throughout this paper we also take the first steps in addressing the identified design gap, namely by looking into key factors and design criteria that may serve as guidelines for the creation of fidget toys or devices that are more inclusive and have in consideration the necessities of low dexterity of movement impaired adults.

The proposed design gap was originally identified from regular contact, over the course of ten months, with health professionals that work closely with neurodivergent and disabled individuals, namely psychologists and occupational therapists. Having had the chance to examine several interactions between the patients and the fidget toys available during their sessions, it was observed that all of them were seemingly aimed at children - with big dimensions, bright colours and sometimes attention-catching noises -, even when the patient was an adult.

It was later reported by six occupational therapists that options are often limited due to the low dexterity displayed by the patients. Most individuals observed were diagnosed with either autism spectrum disorder (ASD) or attention deficit hyperactivity disorder (ADHD), which are disorders known to affect fine motor skills (Akkaya et al., 2024; Pan et al., 2009), which impacts the manipulation of hand-held objects such as fidget toys.

After further research, and inquiry of four individuals that were simultaneously neurodivergent - hence felt a more pronounced and frequent need to fidget or stim (Charlton et al., 2021; Oroian et al., 2024) - and hand movement impairments (namely low fine motor skills, tremors and nerve damage on the wrists), the idea of a possible design gap was solidified. Individuals agreed that although fidget toys could greatly benefit their day-to-day, letting them fidget discreetly, it was either impossible or painful to use them regularly.

This culminated in the present research questions: What can be done to guarantee that adult fidget toys are designed with impaired hand mobility in mind?

Future work will include questionnaires, interviews, co-design workshops with target users and expert validation - including both designers and professionals that work closely with the target population, such as occupational therapists.

For the purposes of this paper, we've approached the research question through Human-Centred Design (HCD), using an extensive literature review and a quantitative analysis of some of the available products as support for both the proposed design gap and the exploration of the possibilities of addressing it.

There is a noticeable gap in the literature, as there is little mention of the characteristics or ergonomics of fidget toys, and no mention of their accessibility or lack thereof for individuals with low dexterity or impaired hand mobility. Furthermore, the existing literature related to fidget toys or the concept of fidgeting - be it in the field of design, psychology, human behaviour, or disability studies - has had its main focus on school-aged children or infants with early diagnosis. More recent studies have started addressing the necessities of neurodivergent and disabled adults (Hanchate et al., 2024; McClain & Mallary, 2025), but the research is still scarce.

What are fidgets, and who needs them?

Fidgeting is a natural behaviour all of us engage in. Defined as a set of repetitive, mindless, and purposeless movements, fidgeting usually happens in moments of distraction, boredom, or anxiety. Similarly, stimming is a self-stimulation or self-soothing behaviour. It's characterized as a set of actions used to regulate emotions, deal with overwhelming environments and maintain focus on tasks (CHADD, 2024).

When people think of fidgeting, they picture someone tapping a foot, twirling a lock of hair, or even biting their nails. In opposition, stimming is usually pictured as more attention-grabbing movements and sounds, such as hand flapping, repeatedly spinning objects, scratching, or echoing sounds and words.

Although fidgeting and stimming are similar and may even show the same exact set of actions, stimming is typically associated with neurodivergent needs, particularly in individuals with autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) (Oroian et al., 2024).

Fidget toys, also known as fidget devices, are tools that allow neurodivergent people to relieve stress, increase focus, and regulate emotions. These objects were originally created with a focus on children who needed to stim, being an attempt to turn self-harming or disruptive behaviours into smaller, quieter actions that avoided both the child hurting itself or others and also grabbing the attention of people around the child.

Later, when fidget toys became more widespread to the general public, they changed focus to stress reducing objects. They have been generalized as tools to calm down and better the focus of any child, no matter if they are neurodivergent or neurotypical. This seems, so far,

to be a marketing ploy, with no clear evidence reported on purported benefits of fidget toys in typical students (e.g., better acquisition of knowledge) (Koiler et al., 2022).

Sellers and manufacturers of fidget toys claim that these tools can be used to increase focus and productivity in school and work environments (Plafke, 2016; Williams, 2017). These purported benefits are not fully backed by academic studies, with some even claiming that it might decrease focus and productivity (Soares & Storm, 2019; Schoenen et al., 2024). It is, however, important to note that most of the existing studies focus on school-aged children (Croley et al., 2022), even with more recent studies starting to shift their focus to older demographics, such as university students and working adults (Hanchate et al., 2024).

Currently, fidgets are targeted at two very specific populations, children and adults, leading to two distinct types of designs[1]. Fidget toys for children focus mostly on the stimulation, with bright colours and funky patterns, and allow for bigger dimensions and more tactile experiences. On the other hand, fidgets for adults regularly focus on discretion, with muted colours and dimensions that allow them to fit inside a pocket or a closed hand (Figures 1 and 2).

The discrete design of adult fidget toys is achieved mainly by reducing their size, in an attempt to avoid bringing attention to the stimming behaviour. Furthermore, this reduction of dimensions is a problem for adults with limited hand mobility, who cannot use this type of fidgets without pain or discomfort.

According to Kapp et al. (2019) and Morris et al. (2025) visible stimming is still highly stigmatized in society, particularly in school settings, leading to exclusion and discrimination (Tancredi & Abrahamson, 2024; Morris et al., 2025). Even well-established organisations, such as Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD), still include in their website, as part of an article titled *Harness Fidgeting to Improve Focus*, from 2017, that "(s)trategies should be discreet when using them in public. Using your own body parts (such as feet or hands) and moving them in a controlled way is a great tool to use for older children, teens, and adults because it does not require any items and may not be really visible to others."

The stigmatization faced by neurodivergent individuals emphasizes the necessity of creating more inclusive products, that allow people to

1 The Works, by Kaiko Fidgets (https://kaikofidgets.com/collections/kaiko-favorites/ products/the-works-fidget-kit), is designed especially for the workplace, with the product page marketing it as "metal fidgets that are discreet, quiet and suitable for those that want age-appropriate fidgets". The *Ultimate Fidget Set*, found in the website National Autism Resources (https://nationalautismresources.com/fidget-set/), is targeted at kids, with its product page saying this versatile set is designed to provide calming input, improve concentration, and reduce stress in a variety of settings—whether at home, school, or on the go". Differences in size, colour, and material are observable between the two sets of fidgets.
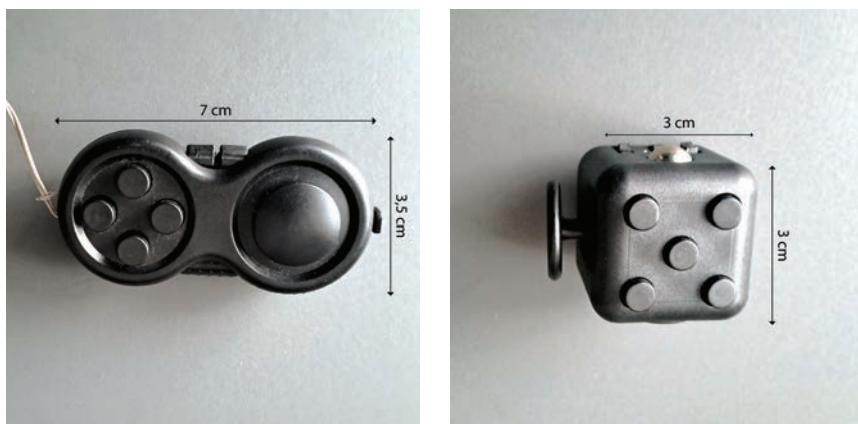
Figures 1 and 2 – Examples of fidgets marketed for adults. The dimensions of the Fidget Pad (on the left) and the Fidget Cube (on the right) ensure the fidgets fit inside a pocket or a closed hand, allowing for discrete use in public.

hide their stimming when they feel the need to while still guaranteeing accessible dimensions on all adult fidget toys. This could make for a significant improvement of the daily lives of the target population, low dexterity individuals that need or want to use fidget toys.

Studies show that there is a statistically significant difference between the fine motor skills of neurodivergent and neurotypical children, at least in regards to children with autism spectrum disorder, attention deficit hyperactivity disorder, or developmental coordination disorder (Akkaya et al., 2024; Gonzalez et al., 2024; Neto et al., 2015; Asonitou et al., 2012; Pan et al., 2009; Van Waelvelde et al., 2010).

The estimated prevalence of autism worldwide is around 0.6% (Salari et al., 2022). Regarding ADHD, the estimated number of adults living with it worldwide is 3.10% (Ayano et al., 2023).

Studies predict that 86.9% of children with ASD are at risk for motor impairment and DCD, which is not outgrown in adolescence (Bhat, 2019). We extrapolate then, that out of the 0,6% of the population with autism, 86.9% of them have some kind of impairment or difficulty with coordination or dexterity, bringing the total number to over 42 million people. Additionally, a motor deficit was observed in 47% of people with ADHD (Farran et al., 2020), meaning that this condition affects around 119 million adults with ADHD.

A design that is able to simultaneously fit the needs of low hand mobility adults without turning fidgeting conspicuous, to avoid the resulting stigmatization, currently does not exist. Furthermore, low hand mobility is prevalent in people with ADHD and ASD, who are the people who need the fidget most regularly (Charlton et al., 2021; Oroian et al., 2024), particularly in high-stress and sensory-overwhelming environments (Kapp et al., 2019), such as the workplace. The possibility of using fidget devices while at work

could increase the well-being of neurodivergent adults, as well as making the surrounding environment more manageable.

Designing accessible fidget devices

Fidget toys, or fidget devices, exist on an interesting crossroads of creativity and science, where design meets ergonomics, human development and psychology. The creation and development of fidgets allows for the integration of disability studies, to ensure that accessibility, social inclusion, capacitation of self-expression and identity remain as the ultimate goals.

Fidget devices function as a dynamic assemblage of components and user interactions. As design objects, fidgets facilitate the connection between body and mind, and integrate both form and function, allowing for a well-rounded practice that bridges disciplines.

Findings suggest that current size, shape and requirements - fine motor skill, grip strength, and precision of movements (Avient Corporation, n.d.) - may not be adequate for an optimal use of fidget toys.

Through a comparison of several fidgets that are currently available on the market, we strive to identify key design criteria that may serve as guidelines for the creation of more inclusive fidget devices.

For the product analysis, the following categories were defined as key characteristics:

Target

Refers to the target population, reflecting the typical marketing of the products (such as focus on "school" for children and "office" for adults).

Options are "children", "adults", or "children, adults" when marketing clearly refers to both populations.

Colours

Refers to the typical colour range the object can be found in.

The characteristic "colourful" corresponds to objects that can be found in any colour but are usually designed with bright or oversaturated colours, while "any" refers to items that do not have a standardised colour range.

Dimensions

Refers to the typical size the object can be found in, taking in account the longest measurement, divided in 5 cm intervals.

The characteristic "> 20 cm" corresponds to the biggest size, and thus the easier manipulation for people with low dexterity (Avient Corporation, n.d.), and "< 5 cm" the smallest, and the hardest to manipulate.

	Target	Colours	Dimensions	Noise	Interaction
Tangle	Children	Colorful	> 20cm	Yes	Two-handed
Slime	Children	Colorful	N/A (box: 10-20 cm)	No	One or two-handed
Fidget Spinner	Children, Adults	Colorful	5-10 cm	No	One-handed
Pop-It	Children, Adults	Colorful	10-15 cm	Yes	One or two-handed
Kinetic Sand	Children, Adults	Colorful	N/A (box: 10-20 cm)	No	Two-handed
Fidget Cube	Adults	Black, Grey	< 5cm	No	One-handed (fingertips)
Stress Ball	Adults	Any	5-10	No	One-handed
Roller	Adults	Metallic	5-10	No	One-handed
Ferrite Putty	Adults	Black	N/A (box: 10-15 cm)	Yes	One-handed
Flippy Chain	Adults	Metallic	5-10	No	One-handed (fingertips)
Magnetic Slider	Adults	Metallic	< 5 cm	Yes	One-handed (fingertips)

Table 1 – Analysis of widely available fidgets, through the comparison of the following categories: target audience, typical colour range, typical dimensions (longest measurement), production of noise, and interaction upon use.

Noise

Refers to the noise made by the object while being utilized. Products where noise is optional (e.g. a button the user might choose to click), such as the fidget cube, have been marked as "no" for the noise category.

Interaction

Refers to the type of interaction between the handheld object and the user.

Options are "two-handed", "one or two-handed" (user choice), "one-handed", and "one-handed (fingertips)". "One-handed (fingertips)" corresponds to the interaction that requires the most precision and grip strength and, as such, is the hardest to manipulate by individuals with low dexterity or impaired hand mobility.

We acknowledge that 11 products is an insufficient sample for any significant conclusion. The comparison made in Table 1 serves fundamentally as a starting point for further, more in-depth research regarding possible guidelines for the design of fidget devices.

From the analysis explored in Table 1, we've identified some of the initial characteristics that we consider key design criteria for the creation of a fidget device that is accessible for limited hand mobility:

Colour

For maintaining discretion and consequently avoiding the discrimination of adults that need to fidget, the tone of the device needs to be muted. From current examples of adult-specific fidget devices, the preferred colours appear to be black, grey, or metallic, allowing the object to fit seamlessly into the working environment.

Dimensions

Although the data is very scarce, we propose that fidget devices should allow for palm manipulation (Figures 3 and 4). This would mean the object would not require finger dexterity, significant grip strength, or fine motor actions (Reese et al., 2024), as these can cause a barrier to the use by people with limited hand mobility. Ideally, the fidgeting elements (clickables, rollers, scratchers, etc.) would also allow for use of the open palm.

Noise

The object should produce minimal to no sound, as not to bring attention to its usage.

Material

Although material (and texture) was not addressed in the comparative analysis, observations and ergonomic studies (Avient Corporation, n.d.) show that a non-slippery plastic or metal is preferred, as has been the trend for adult fidget devices. The texture should be smooth, with little to no grain to avoid issues with tactile-sensitivity and allow for easy cleaning of the device.

Movement

The fidget device should allow for continuous, repetitive hand or finger movements. Allowing for circular movements, which can be done with an open palm, as well as scratching, clicking and pulling (in which case it is necessary to ensure that no significant applied force or small, precise movements are necessary), will maintain the function of the fidget device while also making it accessible to people with limited hand mobility. An example of an object that allows for smooth movements with a relaxed open palm is a Trackball Mouse[2].

2 The Trackball Mouse5i (https://www.kensington.com/pt-pt/p/productos/dispositivos-de-entrada/trackballs/trackball-sem-fios-expert-mouse/)is an object that can be used with a flat, relaxed palm. The dimensions, material and continuous smooth movement make it a good model of characteristics that should be included when designing fidget devices that are accessible for individuals with limited hand mobility.

Figures 3 and 4 – Demonstrative pictures to illustrate the inability to use the current fidgets with the palm of a hand. On the left picture, a Fidget Pad is being used by a person with typical hand mobility. It doesn't allow for more accessible ways of use, such as open-handed manipulation (on the right), which are usually preferred by people with limited hand mobility or fine motor skills.

Conclusion

With this work, we've identified and presented a design gap in the current creation of fidget devices, which highlights the lack of accessibility for adults with impaired hand mobility. As existing devices marketed for adults prioritize discretion and portability, often resulting in small, compact designs, we've noted the access barrier for individuals with hand mobility restrictions. This gap is particularly problematic for adults with Autism Spectrum Disorder and Attention Deficit Hyperactivity Disorder, who frequently rely on fidgeting to regulate emotions and maintain focus, especially in high-stress or sensory-overwhelming environments.

To address this issue, we propose a set of initial design criteria that are essential for inclusive low-dexterity fidget devices. Key recommendations include integrating the already used discrete design with muted colours and silent components, with ergonomic dimensions that allow palm manipulation and more comfortable use. Additionally, materials should be non-slippery to ensure easy handling, and movement mechanisms should enable smooth, continuous actions with minimal applied force. These features aim to balance accessibility with discretion, allowing neurodivergent adults to use fidget devices effectively without drawing unwanted attention.

Further research is necessary to refine and validate these design criteria through user testing and expert validation. By addressing these challenges, future work can pave the way for fidget devices that

promote accessibility and inclusivity in both the workplace and everyday environments.

AFFILIATION

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REFERENCES

Akkaya, E., Güler, Ö., Çakır, M. P., & Arslan, G. G. (2024). Fine motor skills in children with neurodevelopmental disorders: A comparative analysis. *Developmental Neuropsychology, 49*(1), 45–60. https://doi.org/10.1080/87565641.2024.2267211

Asonitou, K., Koutsouki, D., Kourtessis, T., & Charitou, S. (2012). Motor and cognitive performance differences between children with and without developmental coordination disorder (DCD). *Research in Developmental Disabilities, 33*(4), 996–1005. https://doi.org/10.1016/j.ridd.2012.01.008

Avient Corporation. (n.d.). Ergonomic grip design considerations: How to improve human interactions with handheld devices. In *Design guide*. https://www.avient.com/sites/default/files/2021-11/avient-design-ergonomic-design-guide.pdf

Ayano, G., Tsegay, L., Gizachew, Y., Necho, M., Yohannes, K., Abraha, M., Demelash, S., Anbesaw, T., & Alati, R. (2023). Prevalence of attention deficit hyperactivity disorder in adults: Umbrella review of evidence generated across the globe. *Psychiatry Research, 328*, 115449. https://doi.org/10.1016/j.psychres.2023.115449

Bhat, A. N. (2019). Is motor impairment in autism spectrum disorder distinct from developmental coordination disorder? A report from the SPARK study. *Physical Therapy, 100*(4), 633–644. https://doi.org/10.1093/ptj/pzz190

Charlton, R. A., Entecott, T., Belova, E., & Nwaordu, G. (2021). "It feels like holding back something you need to say": Autistic and non-autistic adults' accounts of sensory experiences and stimming. *Research in Autism Spectrum Disorders, 89*, 101864. https://doi.org/10.1016/j.rasd.2021.101864

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD). (2024, July 12). Stimming and fidgeting helps some people with ADHD to pay attention. https://chadd.org/adhd-weekly/stimming-and-fidgeting-helps-some-people-with-adhd-to-pay-attention/

Croley, K. E., Drevon, D. D., Decker, D. M., Hixson, M. D., & Radley, K. C. (2022). The effect of the Fidget Cube on classroom behaviour among students with perceived attention difficulties. *Behaviour Analysis in Practice, 16*(2), 547–557. https://doi.org/10.1007/s40617-022-00734-4

Farran, E. K., Bowler, A., D'Souza, H., Mayall, L., Karmiloff-Smith, A., Sumner, E., Brady, D., & Hill, E. L. (2020). Is the motor impairment in attention deficit hyperactivity disorder (ADHD) a co-occurring deficit or a phenotypic characteristic? *Advances in Neurodevelopmental Disorders, 4*(3), 253–270. https://doi.org/10.1007/s41252-020-00159-6

Gonzalez, M. S., Ni, G., Lam, V., & Demopoulos, C. (2024). Beyond words: An investigation of fine motor skills and the verbal communication spectrum in autism. *Frontiers in Psychiatry, 15*, Article 1379307. https://doi.org/10.3389/

fpsyt.2024.1379307

Hanchate, M. D., Tripathi, S., & Singh, T. (2024). Comparative study of fidget toys on adults' attention span and concentration. In *Routledge eBooks* (pp. 373–382). https://doi.org/10.1201/9781003587200-28

Kapp, S. K., Steward, R., Crane, L., Elliott, D., Elphick, C., Pellicano, E., & Russell, G. (2019). 'People should be allowed to do what they like': Autistic adults' views and experiences of stimming. *Autism, 23*(7), 1782–1792. https://doi.org/10.1177/1362361319829628

Koiler, R., Schimmel, A., Bakhshipour, E., Shewokis, P. A., & Getchell, N. (2022). The impact of fidget spinners on fine motor skills in individuals with and without ADHD: An exploratory analysis. *Journal of Behavioural and Brain Science, 12*(3), 82–101. https://doi.org/10.4236/jbbs.2022.123005

McClain, A. L., & Mallary, K. J. (2025). "When we design for adult learners with disabilities, everyone benefits": Adaptable-InClusive-Motivated (AIM) model for adult educators to include adult learners with disabilities. *Adult Education Quarterly.* https://doi.org/10.1177/07417136251316259

Morris, I. F., Sykes, J. R., Paulus, E. R., Dameh, A., Razzaque, A., Esch, L. V., Gruenig, J., & Zelazo, P. D. (2025). Beyond self-regulation: Autistic experiences and perceptions of stimming. *Neurodiversity, 3*, Article 27546330241311096. https://doi.org/10.1177/27546330241311096

Neto, F. R., Goulardins, J. B., Rigoli, D., Piek, J. P., & De Oliveira, J. A. (2015). Motor development of children with attention deficit hyperactivity disorder. *Brazilian Journal of Psychiatry, 37*(3), 228–234. https://doi.org/10.1590/1516-4446-2014-1533

Oroian, B. A., Costandache, G., Popescu, E., Nechita, P., & Szalontay, A. (2024). Comparative analysis of self-stimulatory behaviours in ASD and ADHD. *European Psychiatry, 67*(S1), S220. https://doi.org/10.1192/j.eurpsy.2024.471

Pan, C., Tsai, C., & Chu, C. (2009). Fundamental movement skills in children diagnosed with autism spectrum disorders and attention deficit hyperactivity disorder. *Journal of Autism and Developmental Disorders, 39*(12), 1694–1705. https://doi.org/10.1007/s10803-009-0813-5

Plafke, J. (2016, December 23). Fidget spinners are the must-have office toy for 2017. *Forbes.* https://www.forbes.com/sites/jplafke/2016/12/23/fidget-spinners-are-the-must-have-office-toy-for-2017/

Reese, P., Hurley, R. A., & Cavender, G. A. (2024). Enhancing package ergonomics for arthritis consumers: A case study. *Packaging Technology and Science, 37*(8), 735–743. https://doi.org/10.1002/pts.2821

Salari, N., Rasoulpoor, S., Rasoulpoor, S., et al. (2022). The global prevalence of autism spectrum disorder: A comprehensive systematic review and meta-analysis. *Italian Journal of Paediatrics, 48*, Article 112. https://doi.org/10.1186/s13052-022-01310-w

Schoenen, E. C., Alsip, B. S., Martinez, J. C., Grekov, P., Aspiranti, K. B., & Hulac, D. M. (2024). A meta-analysis of fidget devices as academic and behavioural interventions. *School Psychology Review*, 1–13. https://doi.org/10.1080/2372966x.2024.2411576

Soares, J. S., & Storm, B. C. (2019). Putting a negative spin on it: Using a fidget spinner can impair memory for a video lecture. *Applied Cognitive Psychology, 34*(1), 277–284. https://doi.org/10.1002/acp.3610

Tancredi, S., & Abrahamson, D. (2024). Stimming as thinking: A critical reevaluation of self-stimulatory behaviour as an epistemic resource for inclusive education.

Educational Psychology Review, 36(3). https://doi.org/10.1007/s10648-024-09904-y

Van Waelvelde, H., Oostra, A., Dewitte, G., Van Den Broeck, C., & Jongmans, M. J. (2010). Stability of motor problems in young children with or at risk of autism spectrum disorders, ADHD, and/or developmental coordination disorder. *Developmental Medicine & Child Neurology, 52*(8), 846–852. https://doi.org/10.1111/j.1469-8749.2009.03606.x

Williams, A. (2017, May 6). How fidget spinners became a hula hoop for Generation Z. *The New York Times.* https://www.nytimes.com/2017/05/06/style/fidget-spinners.html

Community-centred design for social innovation

Bottom-up and government initiatives in Shanghai

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ABSTRACT

This paper describes a design project in Xiazhu Village, WuXie Town, Zhuji City, Zhejiang Province, China. The project uses design ethnography to analyse how design may revive an old community. We initially identified community challenges and needs through pre-immersion observation. Design activism initiatives are introduced in the second step to contribute to the community problems' solution. This transformed a derelict residential place into a public ideas space Community Museum for all. It was found that through this project, the designer's role evolved significantly. In this context, professional designers organised community events, ensured quality, and encouraged residents to take charge of their own needs. Creating a community museum—a concrete space that people recognise—demanded that designers spend more time in the community to effectively engage residents and mobilise them to address real issues. Another critical aspect is mediation. The people involved in the project were essential to its implementation and success. The designers experienced an emotional journey, initially being perceived as a fraud by the residents, to gradually building trust and coordinated communication with the local public sector, ultimately creating a platform for co-creation: the Community Museum. From establishing the Community Museum to hosting numerous activities, this paper demonstrates that a community-based design approach can trigger social innovation and build a better future in communities like Xiazhu Village. Finally, it makes a system of interlinked initiatives designed to promote a systemic shift in how the community develops and influences regional planning in the future.

KEYWORDS

Community-centred design, design for social innovation, participatory design, government initiatives, bottom-up

Introduction

The aim of this research on community-centred design for social innovation is to propose best practices for how Government, citizens, and designers can collaborate toward building a better future in the context of Shanghai and the Zhejiang province communities. The study hypothesis is that through community-centred social innovation design processes, particularly through bottom-up and government initiatives, such as the Community Museum, it is possible to empower communities and designers in the Shanghai region to improve its social well-being. Secondly, a participatory design approach generated qualitative and quantitative data that was subject to analysis by a panel of Chinese and European academics and designers, who used the Delphi method to identify community-centred design priorities in China.

The following sections describe the Community Museum, including the research's key concepts. The research methodology is explained, followed by a discussion of the design processes and concluding with reflections about the stakeholders, the changing role of the designers, and key factors for the project's successful implementation.

Social innovation and design in traditional community

Depopulation is regarded as a significant future sociodemographic challenge in several rural regions worldwide (OECD, 2018; United Nations, 2018). As a result, the "hollowing out" of the countryside has become a popular issue in many emerging countries (Carr & Kefalas, 2009). China has experienced significant peasant migration to urban areas; this phenomenon has resulted in challenges, including labour shortages, industrial recessions, inadequate infrastructure, cultural heritage loss, and social conflicts (Liu et al., 2010; Long et al., 2012; Long et al., 2011; Su et al., 2011). The formerly self-sufficient communities have been hollowed out by these activities, resulting in widespread degradation throughout many regions of rural China (Li et al., 2016).

Globally, policies and initiatives have been implemented to alleviate rural decline, including efforts in local infrastructure and the reorganisation of scattered settlement patterns to enhance the rural economy (Bjorna & Aarsæther, 2009; Cullingworth et al., 2006; Hassebrook, 2003; Natsuda et al., 2012; Ploeg et al., 2000). For instance, at the onset of the twenty-first century, the Chinese government transitioned from an urban-centric policy framework to one that thoroughly endorses agriculture, rural areas, and farmers (Li & Hu, 2015; Li et al., 2010). However, top-down policy, planning, and investment activities may not meet local community needs. In response to such failures, local governments in depopulating rural areas increasingly urge residents' self-reliance to shape and sustain their living environments (Elshof et al., 2015).

In this situation, social innovation has been lately acknowledged as a driver of rural development (Bock, 2016; Bosworth et al., 2016; Dax et al., 2016; Neumeier, 2017; Noack & Federwisch, 2019) that facilitates our engagement with persistent rural challenges through innovative approaches and mitigates the threats of social exclusion and spatial inequality (Moulaert, 2013). In this context, design has shifted significantly; for instance, industrial design has shifted from mass-produced objects to non-technical, community-oriented methods and themes (Mortati & Villari, 2014). The change may be due to the fact that user-centred research in design prioritises individual needs, especially as consumer groups. Nevertheless, consumer status is transient; individuals are frequently immersed in different social contexts (Ji et al., 2017). Thus, the user-centred design (UCD) approach seems insufficient to handle complex social issues and needs in a community. In a community context, the individual is no longer the centre of design attention. Instead, the community and its residents are at the core of the problem and represent a new perspective on solving it.

These issues and changing communities have led some scholars to suggest community-centred design. Meroni (2008) defines community-centred design (CCD) as scaling up user-centred design methods and tools for the community (Meroni, 2008). The author suggests that design with a focus on creative communities (Meroni, 2007), which understands values and behaviours and conceives and develops solutions in collaboration with the most active social communities, is a fundamental role of designers. Since CCD is a catalyst for local change, a resource to be valued, and a source of knowledge, the community is its focus. Thus, design professionals using such an approach must have two primary competencies: the ability to learn about the community through field immersion and form empathic relationships with its members, and the ability to use design knowledge to design with and for the community, developing tools to enable the co-design of new solutions coherent with the context and allowing non-designers to apply their knowledge and professional skills (Cantu et al., 2013).

In line with these perspectives, CCD should focus more on the needs of all people rather than just individuals. This approach offers a more holistic approach to sustainability in today's complex and ever-changing society.

Research methodology

Design ethnography for immersion and intervention

This research used design ethnography as its first research method, namely, participant observation, which aimed to collect data through immersion and direct, firsthand observations of people's everyday behaviours and participate in the community's life in Xiazhu Village. The

design ethnography was used primarily to immerse in the community, before carrying out the project, and to understand the community needs to which the design project should respond. The CCD approach needs the design ethnographer to know the target group. Because the inspiration phase of design is about hearing the voices and understanding the lives of the people we create for. Talking about where people live, work, and live is essential to knowing them. Thus, in-context observation is an essential part of designing for people (IDEO, 2015). From this, we can see that the research process generates specific, experience-based knowledge that is not universal. Ethnographic knowledge is inherently partial, committed and fragmentary (Clifford, 1986). Design ethnography offers numerous methodological experiments, being able to intervene and disrupt events and design and test prototypes. Instead of linear research, iterative procedures and awareness are used (Müller, 2021). In this process, designers should first employ reflective practices (Schön, 2017) and switch between the roles of designer and researcher.

Design ethnography is used in this research to illuminate as many aspects as possible of the social and cultural realms under investigation. The ethnographer must be open, empathetic, sensitive, exploratory, and participatory in the field of research. From a design perspective, according to Müller, the designer mindset focuses on a small, identifiable, and changeable portion of reality—that is, a place where design can have an effect and alter something (Müller, 2021).

Design activism

Design activism is an approach that prioritises design in addressing fundamental civic and societal issues (Song & Lou, 2016). According to Alastair Fuad-Luke (2009), design activism uses design thinking, creativity, and practice to create a counter-narrative that promotes positive social, institutional, environmental, and economic change. The author considers that the "counter-narrative," distinct from the dominant narrative—either the one society accepts as "mainstream" or the one implied in acceptable conduct (the underlying paradigm), needs to be highlighted. Design activism suggests alternatives to the status quo for social change and development.

In design activism, "design" and "activism" flow combined; the river's journey started with design and met with activism (Rezai, 2022). Two goals of design activism are building social capital and improving human well-being. Activism utilises natural, human, social, manufactured, and financial capital (Fuad-Luke, 2009). This paradigm supports cogent arguments for reassessing our values, prioritising measurements, and recalibrating our social aspirations to improve our well-being while acknowledging resource consumption restrictions. Porritt's paradigm builds all other capital on natural capital, the world's actual wealth. Other essential wealth involves

our hands, mind, and spirit (human capital), which seamlessly integrates with social capital (Fuad-Luke, 2011). Social capital encompasses human capital and the collective capital of individuals inside institutions, cultural capital, and symbolic capital. It focuses on social network links that encourage civic participation, trust, mutual support, norms, communal health, common interests, individual or group action, and reciprocity between individuals and communities. Depending on activist aims, these capitals can be affected positively or negatively. Thus, capital can be increased, decreased, or redistributed (Fuad-Luke, 2009).

Designers can locate areas for activist work based on the diversity and complexity of contemporary activism in a larger landscape (Fuad-Luke, 2009). Designers transition from object creators to mediators among actors, forces, processes, and narratives (Schalk, 2007), whose function is to coordinate and integrate interests. The mediator plays a crucial role in facilitating selection, interpretation, and interventions, by guiding stakeholder interactions and perspectives (Hernberg & Mazé, 2017). In addition to form and function, designers should consider user needs and ethics when designing. It can then hire activists or other people to implement the ideas, or the designer can use people's ideas (Rezai, 2021). Furthermore, an activist-designer must observe, analyse, and act through their design. Activist designers must be more aware of their environment, particularly social problems, and think creatively and critically (Rezai, 2022). Design activism emphasises questioning and critique, such as keen observation, identifying issues, and individual change, rather than only having a capitalist component (Rezai, 2021). Thus, design activism is applied in this research. Researchers/designers can act as mediators and rebalance community human and cultural capital through design. This method tries to rebuild social capital, enhance community life, and address issues.

Community bottom-up design for social innovation

The Community Museum project began in 2019 in Xiazhu Village, WuXie Town, Zhuji City, Zhejiang Province, China. Wuxie Town, with its five natural villages—Shangzhu, Xiazhu, Qianyang, Xiyou, and Houxie—is a territory with 39.38 square kilometers[1], which by the end of 2019 registered a population of 15.526. Our project in Xiazhu Village will be showcased, with more active initiatives expected in the near future.

From a design perspective, the project can be better described as the beginning of a systematic process rather than the design of an ideal country. The designers worked with the local community by initiating activities to transfer knowledge and try to solve ageing, economic, and cultural homogeneity issues in this community. This approach starts with analysing

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1 https://maps.app.goo.gl/P7MXL5jVBkF3h6k88

the community context, resources, and social innovation activities, and then creating specific projects geared towards future living. Finally, it makes a system of interlinked initiatives designed to promote a systemic shift in how the community develops and influences regional planning in the future.

From zero to one breakthrough–creating a public ideas space for community collaboration

Xiazhu Village inhabitants make a living from hosiery and agriculture. Most of the town's youthful inhabitants have relocated to locations with better employment prospects due to urbanisation, leaving the community largely occupied by older people who can no longer work. However, at the 20th National Congress of the Communist Party of China, rural revitalisation became a fundamental policy for China's agricultural and rural sectors. To accommodate urbanisation and modernisation, rural social traits, culture, and development ideals must be understood and respected. Even though the state has implemented relevant regulations, there are few adequate actions. These communities' economies in various industries have stalled. Second, the project area has a great ecology, a well-preserved ethnic culture, and most importantly, numerous ancient village buildings. Unfortunately, the area's similar economy and heavy ageing hinder its future development.

The designers found that the community's rich historical and cultural heritage is being wasted. Some old villages are in danger of collapse owing to insufficient protection; therefore, residents have to understand the style of construction. Thus, we developed interdisciplinary teams in village planning, tourism development, industrial design, and art to promote cultural autonomy and industrial innovation among residents in an area with a unique natural ecological environment and a rich intangible cultural heritage to address the lack of awareness and economic development.

After understanding the area, the designers rented a vacant residential house in 2019 to immerse themselves in local life and discover community needs. We observed the community for a while and noticed that most residents were old and lived alone with locked doors, rarely engaging with neighbours. This was rare in rural China but is now a problem due to urbanisation. In this situation, the designers identified the community needed a public space to exchange ideas about bringing more communal activities to the community. Thus, after hearing the community needs and ambitions, the designers presented to the people the idea of creating a public space of contemplation to open a window to the outside world and strengthen local culture to prevent homogeneity while the village is revitalised by such a space. It is a design intervention to reconstruct the relationship between people and between people and other communities. Culture has the potential to enhance cross-cultural interactions, foster

shared social capital, and strengthen community cohesion. A community museum can serve as a dynamic space for generating and sharing ideas. Through our social innovation design initiative, we aim to establish a community museum that functions as a public space for dialogue and creativity. This project is exploratory and experimental, seeking to introduce the public to the concept of a museum as a tool for addressing social issues, activating community engagement, and responding to local needs.

The Community Museum project began in 2019 with three designers[2] organising and completing its tasks as activists. The project does not have a grand political vision and top-down power, so we wanted to change the community in a more personal way so residents felt like these things were relevant to them and gradually became involved.

Start from one–place making: a place is a space endowed with sense

The Community Museum opened in August 2022 at Xiazhu Village. The designers have steadily drawn more visitors since its launch, including local government representatives, who went after witnessing the news coverage and gave their proposals for museum development. Second, media coverage[3] has allowed people from different parts of the area to visit the museum independently. We have also held meetings in the museum space[4], which has undoubtedly brought energy and youth power to the community[5]. The Community Museums are non-local

2 In the initial design team, apart from the researcher/designer Aoni Zhang, who is responsible for collecting, organising, holding regular activities, and mainly contributing with communication design and research through design, there is also the designer– visual artist Junzheng Jiang; the craftsman Huaye liang who is expert in carpentry; the artist-in-residence Junzheng Jiang who is responsible for branding and advertising; and the designer and artisan-in-residence Huaye Liang who is responsible for construction works and carpentry.

3 Local media coverage: https://bit.ly/4htfEzj.

4 The seminar news is available: https://bit.ly/4aRpnNu.

5 Since the project began, several key activities have taken place: 1) The art exhibition Live Up to Youth, Live Up to Beauty was held; 2) Wang Kongyu, Minister of the Publicity Department of the Zhuji Municipal Party Committee, along with a delegation, visited the Community Museum and shared their insights on its future development and planning; 3) Researchers participated in the "Beautiful China" Youth Forum organised by the China Academy of Art, where they presented the design process behind the community museums; 4) The event Redefining Museum Activities was hosted at Upbeing; 5) An art exhibition titled Looking Back was organised; 6) The POP-UP FESTI event took place; 7) A reading club and a feminist symposium were launched; 8)The long-table banquet Redefining the Museum – Ten-Metre Table was held; 9) The Zhuji Western Returned Scholars Association hosted an exchange meeting; 10) A handmade market titled Gathering and Living was organised; 11) The event A Food Exploration at a Community Museum was held; 12) In addition to these formal events, numerous informal visits and daily interactions have also contributed to the life of the project.

spaces with several places that offer a more resilient natural, social, and production system. The designers held an exhibition entitled Looking Back on November 21, 2022, enabling us to empower residents and foster a sense of ownership and engagement. We considered inviting surrounding villages to eat in our public space would be a good design engagement. The initiator visited the homes of the villagers, explained our intentions, and handed out invitation cards to the residents, inviting them to participate in the event. In the initial conversation, the residents seemed a little reserved, but as the communication deepened, they said they would come to participate and recommended suitable candidates for us. For example, the landlady of a daily necessities store told us that we could go to the square in front and invite the aunties who do public square dancing every day to participate. She expressed her belief that these groups exhibit a high level of enthusiasm for participating in community activities. The rules: 1) Our design team invites surrounding villagers to join us; 2) We send each invited resident a design invitation; and 3) Each villager supplies one to three dishes for a shared feast.

We aim to improve neighbour relations and tackle this community's social challenges via daily activities like conversing in the vegetable patch or over meals. On November 21, 2022, local government and neighbours debated the future of this community at the Community Museum's "Looking Back" exhibition opening event. Some other local media also came to cover the event. After the opening ceremony, designers and locals prepared a shared feast (Figure 1).

From one to infinite possibilities: contribution to a new territorial ecology

In this phase, through a co-creative website[6] the designers encouraged individuals from other Chinese regions to visit the Community Museum. Some educators and parents brought their children to the museum to study. Following the feast, we visited various residents to make better event preparations (Figure 2).

The Community Museum is a project that the researcher initiated to participate collectively, and it involves four types of participants (Table 1).

Residents showed suspicion, apathy, isolation, loneliness, and caution while seeing outsiders during the research. People are unfamiliar with each other; therefore, defensiveness is high. The village's significant problem is that older people are typically left to fend for themselves when critical concerns arise, which poses a challenge for many older people. These challenges inhibit sustainable community development if not addressed. After extensive research, designers found two regular

6 Co-creative website in China—https://shorturl.asia/ug3hy.

Figure 1 – Events held during *Looking Back* (Zhang, 2022).

gathering places, namely the vegetable and creek areas that are separate. Villagers produce and wash vegetables, do laundry, and, most importantly, speak every day in these common places. Second, we found that the community's public spaces, such as elderly cultural centres, have similar policy promotion activities.

Discussion and conclusion

Museums are usually top-down initiative establishments in major cities. For a community like Xiazhu Village, design culture is not part of the traditional paradigm. In such circumstances, anyone who wants to acquire more knowledge must leave the community and go to resource-rich areas in search of a better life. Such behaviour has created new social problems, such as ageing and serious urbanisation, which will hinder the development of a sustainable society. These community issues are bound to become obstacles to building a sustainable society. The Community

Figure 2 – Various activities held during from one to one to infinite possibilities (Zhang, 2022).

Museum represents a community-centred design ideas space and uses it to reconstruct the bond between people and the community through designer-initiated activities. It became apparent that the role of the designer shifted. In this setting, professional designers were event initiators who built an idea platform for the community, guaranteed the area's quality, and encouraged residents to take charge of their own needs. Another important point to discuss is that the expertise of being able to use abstract spaces was not sufficient. By building a concrete space that people can recognise—the Community Museum—the designers built an initiative with social impact. By engaging in design ethnography and community immersion, they effectively tackle and mobilise the community to solve these genuine community problems.

The individuals involved in the project played a crucial role in ensuring its successful implementation. Throughout the process, the designers underwent a significant transformation, initially viewed as fraudulent

Four types of participants	Details
Public sector	Three departments from the office were involved: the WuXie Town People's Government; the Zhuji City Bureau of Commerce; and the Bureau of Culture, Radio, Television, Tourism, and Sports.
Local residents in XiaZhu village	The feast empowers community members to share expertise and discuss future hopes and issues. Second, users may view and plan. Designers help representatives communicate through activities.
Professional designers, related researchers, and local fabricators and builders	They built a community ideas platform, ensured quality, and encouraged residents to take care of their needs.
Nationally exhibiting artists and interested participants	This group provided designers and researchers to start projects online and invite professionals around the world to contribute, giving the community a constant driving force.

Table 1 – The four types of participants in the Community Museum (Zhang, 2024).

by residents but progressively establishing trust and effective communication with the local public sector, culminating in the development of a co-creation platform: the Community Museum.

In conclusion, from the initial establishment of the Community Museum to its current housing of various activities, we have proved with our actions that a community-based design approach can trigger social innovation and build a better future in communities like Xiazhu Village. It makes a system of interlinked initiatives designed to promote a systemic shift in how the community develops and influences regional planning in the future.

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REFERENCES

Bjorna, H., & Aarsæther, N. (2009). Combating depopulation in the northern periphery: local leadership strategies in two Norwegian municipalities. *Local Government Studies, 35*(2), 213–233. https://doi.org/10.1080/03003930902742967 35(2), pp. 213-233.

Bock, B. B. (2016). Rural marginalisation and the role of social innovation: A turn towards nexogenous development and rural reconnection. *Sociologia Ruralis, 56*(4), 552–573. https://doi.org/10.1111/soru.12119

Bosworth, G., Rizzo, F., Marquardt, D., Strijker, D., Haartsen, T., & Thuesen, A. A. (2016). Identifying social innovations in European local rural development initiatives. *Sociologia Ruralis, 56*(4), pp. 442–461. https://doi.org/10.1111/soru.12110

Cantu, D., Corubolo, M., & Simeone, G. (2013). A community-centered design approach to developing service prototypes. In S. Clatworthy, F. Morelli, & B. Meroni (Eds.), *ServDes.2012 Conference Proceedings: Co-creating services: The 3rd Service Design and Service Innovation Conference,* pp. 65–70, 8-10 February, Espoo, Finland. Linköping University Electronic Press.

Carr, P. J., & Kefalas, M. J. (2009). *Hollowing out the middle: The rural brain drain and what it means for America*. Beacon Press.

Clifford, J. (1986). Introduction: Partial truths. In J. Clifford & G. E. Marcus (Eds.), *Writing culture: The poetics and politics of ethnography* (pp. 1–27). University of California Press.

Cullingworth, J. B., Nadin, V., Hart, T., Davoudi, S., Pendlebury, J., Vigar, G., & Townshend, T. (2006). *Town and country planning in the UK* (14th ed.). Routledge.

Dax, T., Strahl, W., Kirwan, J., & Maye, D. (2016). The LEADER programme 2007–2013: Enabling or disabling social innovation and neo-endogenous development? Insights from Austria and Ireland. *European Urban and Regional Studies, 23*(1), pp. 56–68.

Elshof, H., & Bailey, A. J. (2015). The role of responses to experiences of rural population decline in the social capital of families. *Journal of Rural and Community Development, 10*(1), pp. 72-93.

Fuad-Luke, A. (2009). *Design activism: Beautiful strangeness for a sustainable world*. Earthscan.

Fuad-Luke, A. (2011). Re-crafting capitalism, regenerating societies: How do designer-makers amplify, build, and regenerate social capital? *Making Futures Journal, 2* (2). https://makingfutures-journal.org.uk/index.php/mfj/article/view/111

Hassebrook, C. (2003). *Strategies to revitalize rural America*. [Publisher].

Hernberg, H., & Mazé, R. (2017). Architect/designer as 'urban agent': A case of mediating temporary use in cities. *Nordes, 2017*(1), Article 053. https://doi.org/10.21606/nordes.2017.053

IDEO. (2015). *The field guide to human-centered design: Design kit* (1st ed.). IDEO.

Ji, T., Yang, Q., & Wang, W. (2017). Design and social innovation: Design practice and methods based on networks and communities. In *Product-service system design for sustainability* (pp. 345-361). Routledge.

Li, Y., & Hu, Z. (2015). Approaching integrated urban-rural development in China: The changing institutional roles. *Sustainability, 7*(6), pp. 7031–7048.

Li, Y., Westlund, H., & Cars, G. (2010). Future urban-rural relationships in China: Comparison in a global context. *China Agricultural Economic Review, 2*(4), pp. 396–411.

Li, Y., Westlund, H., Zheng, X., & Liu, Y. (2016). Bottom-up initiatives and revival in the face of rural decline: Case studies from China and Sweden. *Journal of Rural Studies, 47*, pp. 506–513.

Liu, Y., Liu, Y., Chen, Y., & Long, H. (2010). The process and driving forces of rural hollowing in China under rapid urbanization. *Journal of Geographical Sciences, 20*,

pp. 876–888.

Long, H., Li, Y., Liu, Y., Woods, M., & Zou, J. (2012). Accelerated restructuring in rural China fueled by 'increasing vs. decreasing balance' land-use policy for dealing with hollowed villages. *Land Use Policy, 29*(1), pp. 11–22.

Long, H., Zou, J., Pykett, J., & Li, Y. (2011). Analysis of rural transformation development in China since the turn of the new millennium. *Applied Geography, 31*(3), pp. 1094–1105.

Meroni, A. (2007). *Creative communities: People inventing sustainable ways of living*. Edizioni Polidesign.

Meroni, A. (2008). *Strategic design: Where are we now? Reflection around the foundations of a recent discipline*. [Publisher].

Mortati, M., & Villari, B. (2014). Design for social innovation: Building a framework of connection between design and social innovation. *In* Conference Proceedings, *ServDes*.

Moulaert, F. (2013). *The international handbook on social innovation: Collective action, social learning and transdisciplinary research*. Edward Elgar Publishing.

Müller, F. (2021). Design research: Immersion and intervention. In *Design ethnography: Epistemology and methodology* (pp. 21-29). Springer International Publishing. https://doi.org/10.1007/978-3-030-60396-0_4

Natsuda, K., Igusa, K., Wiboonpongse, A., & Thoburn, J. (2012). One Village One Product—Rural development strategy in Asia: The case of OTOP in Thailand. *Asia Pacific Journal of Public Administration*, 33(3), pp. 369-385.

Neumeier, S. (2017). Social innovation in rural development: Identifying the key factors of success. *The Geographical Journal*, 183(1), pp. 34-46.

Noack, A., & Federwisch, T. (2019). Social innovation in rural regions: Urban impulses and cross-border constellations of actors. *Sociologia Ruralis*, 59(1), 92-112.

OECD. (2018). *Rural policy 3.0: Policy note. A framework for rural development*. https://www.oecd.org/cfe/regionaldevelopment/Rural-3.0-Policy-Note.pdf

Ploeg, J. v. d., Renting, H., Brunori, G., Knickel, K., Mannion, J., Marsden, T., ... Ventura, F. (2000). *Rural development: From practices and policies towards theory*.

Rezai, M. (2021). 11 Design Activism, Democracy, and the Crisis of Social Networks. In *Design & Democracy: Activist Thoughts and Examples for Political Empowerment,* pp. 119-134. Berlin, Boston: Birkhäuser. https://doi.org/10.1515/9783035622836-014

Rezai, M. (2022). Design by act: A new look at design activism and its actors. In C. Michelle, M. Ralf, & J. Wolfgang (Eds.), *NERD - New experimental research in design*, pp. 110-119. Birkhäuser.

Schalk, M. (2007). Urban curating: A critical practice towards greater 'connectedness'. In *Altering practices* (pp. 153-166). Routledge.

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge.

Song, D., & Lou, Y. (2016). Design activism: Action research as an approach when design meets social innovation. *Design Principles and Practices*, 8(2), 284-290.

Su, S., Jiang, Z., Zhang, Q., & Zhang, Y. (2011). Transformation of agricultural landscapes under rapid urbanization: A threat to sustainability in the Hang-Jia-Hu region, China. *Applied Geography*, 31(2), pp. 439-449.

United Nations. (2018). *Urbanization prospects: The 2018 revision*. Accessed July 18, 2021, from https://population.un.org/wup/Country-Profiles/

UNU, I.A.S., & IGES (Eds.). (2018). *Sustainable use of biodiversity in socio-ecological production landscapes and seascapes and its contribution to effective area-based conservation* (Satoyama Initiative Thematic Review, vol. 4). United Nations University Institute for the Advanced Study of Sustainability, Tokyo.

The semiotics of nostalgia

Polaroid photography and the rewriting of collective memory in branding

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ABSTRACT

In contemporary advertising, nostalgia has emerged as a strategic tool for fostering emotional connections between brands and consumers. However, its application ranges from superficial aesthetic references to deeper reinterpretations that strengthen perceived authenticity. This paper argues that campaigns which integrate nostalgic elements into contemporary narratives tend to evoke more meaningful engagement than those that merely replicate the past. The study is structured around three interconnected theoretical axes: collective memory, social nostalgia, and Peircean Thirdness, understood as a semiotic mechanism for mediating between temporalities. Through a visual experiment involving Polaroid photography, the research explores how the materiality and chromatic qualities of analogue images influence the perception of authenticity in nostalgic advertising. Drawing on Buse's (2016) analysis of Polaroid as both a cultural icon and a sensorial practice, the study highlights how the tactile immediacy of instant photographs offers a counterpoint to the dematerialisation of digital imagery. The findings suggest that nostalgia is most effective in advertising when it functions not as a return to the past but as a recontextualisation of historical symbols within present-day narratives — allowing brands to bridge tradition and innovation while fostering affective resonance.

Introduction

According to Lammersma and Wortelboer (2017), nostalgic advertising is strategically designed to elicit emotional responses and foster a connection between brands and consumers by using cues from the past. The effectiveness of such appeals, however, depends on how deeply they resonate with consumers' personal memories, with more meaningful connections emerging when nostalgia is tied to autobiographical experiences. In an increasingly saturated media landscape, the way nostalgia is deployed becomes crucial: it can determine whether a campaign is perceived as a thoughtful reimagining of shared cultural memory or merely as a decorative simulation of the past. Lammersma and Wortelboer also note that when nostalgic cues lack personal relevance or symbolic coherence, they may be dismissed by audiences and even lead to negative brand perceptions.

This study examines how nostalgic advertising can transcend mere aesthetic appeal to function as a communicative tool that negotiates the tension between tradition and innovation. Drawing from an interdisciplinary framework that integrates photography, branding, visual communication, and media theory, the research explores how visual nostalgia is constructed and perceived in contemporary advertising contexts.

A central focus is placed on Polaroid photography, whose sensorial and symbolic qualities offer a rich ground for investigating the perception of authenticity in nostalgic imagery. As Buse (2016) observes, Polaroid photography has transcended its technological origins to become a widely recognised cultural icon, whose visual identity is persistently evoked across films, television series, video games, and social media platforms. More than a nostalgic aesthetic, the Polaroid format embodies a sensorial and participatory experience in which each instant photograph becomes a singular, unrepeatable artefact, imbued with emotional and temporal resonance. This material uniqueness, Buse argues, reinforces the perception of authenticity and immediacy often lost in digital reproductions. Photographing with a Polaroid not only documents reality but also transforms it, revealing nuances that might otherwise go unnoticed in conventional image-making. To support the discussion, a Polaroid photograph from the author's personal archive is reproduced below (Figure 1).

By analysing how nostalgic imagery is mediated, interpreted, and potentially mobilised in advertising, the study seeks to understand its broader implications in fostering emotional engagement, cultural memory, and brand authenticity. To explore this premise, a speculative approach based on visual experimentation is adopted, in which analogue photographs serve as conceptual visualisations of how nostalgia may be recontextualised in advertising narratives.

The construction of advertising nostalgia through collective memory

Boym (2001) proposes a critical framework that distinguishes between two fundamental modes of nostalgia: restorative and reflective. While restorative nostalgia aims to reconstruct an idealised version of the past, reflective nostalgia engages with the past critically, acknowledging its discontinuities, imperfections, and the constructed nature of memory. Rather than a mere sentimental longing, nostalgia is conceptualised as a multidimensional cultural phenomenon that mediates between past and present, shaping both collective memory and individual identity. This framework demonstrates how nostalgia frequently emerges in contexts of accelerated historical, social, or technological transformation, acting as a cultural mechanism for reinterpreting temporality and negotiating meaning in times of uncertainty.

Natali (2006) highlights that nostalgia, once viewed as a pathology, has come to be understood as a cultural experience that preserves memories in a constantly changing world. Niemeyer (2018) expands on this perspective by treating nostalgia as a mechanism of temporal resistance, in which the past is not only remembered but also reinterpreted to meet present needs. The relationship between nostalgia and advertising can be better understood through the concept of collective memory, developed by Halbwachs (1990). According to the author, memory is not a purely individual phenomenon but rather a socially mediated process in which recollections are organised, filtered, and reconstructed within social groups. He argues that memories are shaped by the social and historical contexts in which individuals are embedded, meaning that collective memory is neither fixed nor immutable but a continuous process of reinterpretation of the past.

From this perspective, in the context of advertising, nostalgia is not limited to the mere retrieval of elements from past decades but rather their reinterpretation through new narratives that create an intersection between past and present. Burke (1997) reinforces this idea by highlighting that social memory is selective and adaptable, reflecting the needs and interests of a group at a given historical moment. Niemeyer (2014) expands on this viewpoint by emphasising that nostalgia should be understood within a broader critical context, encompassing historical, social, political, and economic dimensions. Beyond its emotional function, nostalgia is frequently leveraged as a commercial and media strategy, used to reinforce narratives and shape cultural perceptions. This reinforces the notion that nostalgia in advertising is not merely a retrieval of past elements but an active reconstruction of collective memory, adapted to contemporary discourses to generate emotional engagement.

Lindstrom (2011) observes that although the past is often idealised as perfect, authenticity plays a crucial role in the construction of nostalgia—and nothing truly authentic is devoid of imperfections. The author explains that small details, such as a bruise on an apple, a chip on porcelain, or a scratch on the surface of an old piece of furniture, contribute to a sense of familiarity and evoke affective memories. These imperfect elements refer to lived experiences—such as a worn-out toy found in the attic or a scratched bracelet inherited from a grandmother—thus fostering a deeper emotional connection. Lindstrom further questions the actual meaning of authenticity, noting that in the context of marketing and advertising, the concept can take on multiple interpretations. According to Webster's Dictionary, something authentic is "worthy of acceptance or belief," yet in practice, this definition becomes ambiguous (Lindstrom, 2011, p. 144).

Pichierri (2023) emphasises that nostalgia must be balanced with innovative elements for a brand to position itself as both authentic and relevant in today's market. He argues that campaigns which recreate or reimagine iconic songs, classic characters, or familiar situations from past decades can effectively engage different generations—those with direct lived experiences and those exposed through mediated memories such as films or family narratives. Lindstrom (2011), in turn, reinforces this view by describing nostalgic marketing as a long-lasting and highly effective strategy, wherein advertisers reactivate sensory elements—images, sounds, and emotions—from previous decades to promote contemporary products. This can occur through the revival of classic advertisements, retro packaging, or discontinued mascots, but also through more subtle evocations of a simpler time. Together, these perspectives demonstrate that nostalgia in advertising operates not merely as recollection, but as a strategic reinterpretation that strengthens emotional connections while projecting cultural awareness and innovation.

Nostalgic photography and thirdness

Photography plays a crucial role in intensifying collective nostalgia, as it materialises memories and reinforces their perceived authenticity. Barthes (1980) argues that photography not only documents the past but also transforms it into a tangible object of memory, imbued with affective meanings. His concept of punctum—the unexpected detail that triggers an emotional response—illustrates how images can activate nostalgic feelings by establishing a sensory and subjective connection with the viewer. Among photographic formats, Polaroid stands out as a device of affective memory since, unlike digital photography—which can be manipulated and reproduced indefinitely—each instant image is unique and unrepeatable. The chemical process of image development itself enhances its emotional impact, creating a sensory experience that amplifies the perception of

originality. Barthes (1980) reinforces this idea by stating that the materiality of photography contributes to its symbolic function, going beyond mere visual documentation to become an artefact of memory preservation.

If photography and collective memory provide the foundation for understanding advertising nostalgia, the phenomenological categories of Firstness, Secondness, and Thirdness — formulated by Charles Sanders Peirce in 1867 (as cited in Santaella, 1983) — can contribute to understanding how nostalgia can be reinterpreted in contemporary advertising. According to Santaella (1983), these categories are not mere arbitrary classifications but universal principles that structure both perception and human cognition. The author states that Firstness refers to the domain of pure quality, the state of possibility and unmediated experience. It manifests in the present moment, in the primary and immediate sensation that is not linked to an external relationship. Secondness, in turn, introduces factuality and the resistance of the material world, manifesting itself in the confrontation with reality. For Peirce, it involves confrontation and reaction, while Santaella (1983) defines it as the perception of the external world as something concrete and irreversible.

Thirdness, according to Santaella (1983), refers to mediation and interpretation that connect signs and construct new meanings. In nostalgic advertising, this means that authenticity does not lie in the mere repetition of the past but in how it is reinterpreted into new narratives. Instead of simply reproducing old references, brands can use Thirdness to create bridges between temporalities, adapting nostalgic elements to the present. Successful campaigns rescue cultural symbols but contextualise them within contemporary values and expectations (Pichierri, 2023). A Polaroid camera, for example, is not just an icon of the past but an artefact that can be reinterpreted in modern visual culture, being used by new generations both as an aesthetic symbol and as a means of artistic and emotional expression (Buse, 2016). Thus, it can be argued that authenticity in nostalgic advertising does not necessarily depend on fidelity to the past but rather on the meaningful integration of nostalgic elements into the present. The materiality of Polaroid and the logic of Thirdness demonstrate that, when reinterpreted, nostalgia can bridge tradition and innovation, enabling brands to construct engaging and emotionally resonant narratives.

Methodology, visual experimentation and discussion

This research adopts a qualitative and interpretative approach grounded in visual experimentation.

The methodology involves the production and analysis of Polaroid images captured using SX-70 Sonar and Impulse AF cameras. These photographs were not selected randomly but rather composed with the intention of visually exploring how aesthetic elements and symbolic references

might evoke nostalgia and influence the perception of authenticity in advertising contexts.

The choice of Polaroid is justified by the singular nature of its photographic process, which, unlike digital reproduction, produces unique, unrepeatable images that exist materially in time and space. As Buse (2016) argues, the Polaroid print is not merely a photographic output but a performative moment — a photographic event that foregrounds the act of taking the picture as much as the picture itself. This immediacy and physicality shift the emphasis from the contemplation of a distant memory to the embodiment of an experience, reinforcing its affective and mnemonic power.

The visual experimentation thus acts as a generative strategy to investigate how analogue materiality — particularly the chromatic palette, tactile qualities, and iconic visual motifs — contributes to the re-signification of the past within a contemporary narrative. The analytical process does not follow a rigid methodological framework, such as content or semiotic analysis, but instead aligns with an interpretative visual reading supported by interdisciplinary theoretical grounding. Concepts from authors such as Barthes (1980), Halbwachs (1990), and Santaella (1983) were used to inform the reading of each image, emphasising how photographic elements may activate cultural memory and Thirdness. Although no audience-based feedback or empirical validation was collected, the images were conceived as speculative advertising fragments — reflective of stylistic strategies often found in nostalgic campaigns, such as the aestheticisation of retro objects and atmospheres. In this sense, the experimentation is intended less as an empirical test and more as a theoretical provocation, offering visual evidence of how nostalgia can be constructed, mediated, and potentially mobilised within advertising practice.

Figure 2 captures the façade of the Megaplex cinema in Sandy, Utah. The photograph's colour palette, with bluish, purplish, and magenta tones, directly aligns with the predominant visual aesthetics of the 1980s, characterised by the intense use of neon, vibrant gradients, and synthetic lighting. According to Barthes (1980), photography not only documents a moment in time but also transforms it into an object imbued with memory and emotion. In this case, the Polaroid's chromatic signature reinforces the perception that this image could have been taken in the 1980s, consolidating its perceived authenticity. Additionally, the photograph can be analysed from the perspective of collective nostalgia (Sedikides & Wildschut, 2019). The cinema, as a social space, is intrinsically linked to the shared experience of generations. By capturing this specific location with a colour spectrum characteristic of past decades, the image reinforces the concept of collective memory (Halbwachs, 1990), where nostalgia is activated through cultural symbols that transcend individual experience.

Figure 1 – *Analog Blossoming* (Rossi, 2023).

Figure 2 – *A Portal to the Past* (Rossi, 2024).

Figure 3 – *The Sound of Nostalgia* (Rossi, 2024).

Figure 3 – *Analogue vs. Digital* (Rossi, 2025).

From the perspective of Thirdness (Santaella, 1983), the photograph does not merely record the past or imitate its aesthetics but creates an intersection between past and present, reinterpreting nostalgic elements within a new visual context. The cinema, as a symbol of timeless cultural consumption, is repositioned within a contemporary photograph that, paradoxically, could be mistaken for a historical image, reinforcing the concept of constructed authenticity in nostalgic advertising.

In Figure 3, a vinyl record of Thriller (1982) by Michael Jackson is prominently placed atop a collection of LPs, with a cat resting on them. Beyond its intriguing visual composition, the image explores the relationship between music, collective memory, and nostalgia, reinforced both by the object depicted and by the aesthetic of Polaroid photography. According to Halbwachs (1990), collective memory is a socially mediated process in which certain elements of the past become reference points for specific groups. The album Thriller is not just an iconic record from the 1980s but also a symbol of global pop culture, laden with emotional significance for those who experienced that era. For many fans, listening to the songs from this album can act as a flashback trigger, evoking both individual and collective memories linked to youth experiences, cultural trends, and even personal moments lived during that period. This ability of music to activate memories aligns with the notion that nostalgia is not merely a passive retrieval of the past but an active process of reconstructing and reinterpreting memory (Sedikides & Wildschut, 2019). When an iconic song such as those from Thriller is revisited, it does not merely recall its original context but is also reinterpreted in the present, resonating in different ways for different generations.

Polaroid photography visually reinforces this nostalgic evocation, as the image's colour tones exhibit the characteristic bluish, magenta, and blown-out whites often associated with analogue photography from the 1980s. As Barthes (1980) argues, the materiality of photography grants the image a sense of authenticity and tangibility that intensifies its emotional connection with the viewer. Just as music transports memory to a past time, the chromatic aesthetic of Polaroid visually reinterprets the atmosphere of the 1980s, creating an intersection between the materiality of the image and the sensory experience of musical nostalgia. From the perspective of Thirdness (Santaella, 1983), the photograph does not merely document a nostalgic object (the vinyl) but also mediates the connection between past and present, reinterpreting the visual aesthetic and cultural impact of the album within the contemporary context. Thus, the image does not simply depict a vinyl record but also creates a bridge between different temporalities, where nostalgia is simultaneously experienced in both the visual and auditory realms.

Lastly, Figure 4 presents a visual dialogue between past and present, portraying a Polaroid Impulse AF camera from 1988 alongside an iPhone 13. The composition of the photograph strategically positions the iPhone where the Polaroid's lens would be, creating a symbolic fusion between the two devices, which, despite their technological and temporal differences, share the same essential function: capturing images. The photograph directly reflects the concept of Thirdness, proposed by Peirce and further developed by Santaella (1983), which describes the mediation between distinct signs to construct new meanings. By visually integrating an analogue and a digital device, the image serves as a symbolic intersection

between temporalities, suggesting that despite technological evolution, the essence of photography remains unchanged. This interplay between past and present reinforces the idea that nostalgic advertising does not rely solely on the reproduction of old visual elements but on their reinterpretation within a contemporary context.

From the perspective of collective memory (Halbwachs, 1990), this photograph can be interpreted as a reflection of how technologies shape our relationship with time and nostalgia. While the Polaroid evokes a past in which photography was a more deliberate and physical process, the iPhone represents the era of instantaneity and the democratisation of imagery, where anyone can capture and share moments in real time. The image, therefore, does not merely depict two distinct objects but synthesises two different photographic cultures that coexist within the contemporary imagination.

This juxtaposition can also be analysed through the lens of nostalgia's re-signification in advertising. Brands such as Polaroid and Apple frequently appropriate the past to construct narratives of innovation and authenticity. Polaroid reclaims its analogue identity and adapts it to the digital market, while Apple incorporates nostalgic elements into its campaigns to reinforce its emotional connection with consumers (Antunes, 2023; Eaton, 2024). Thus, the photograph not only represents an encounter between objects but also highlights how nostalgia and innovation can coexist within visual culture and contemporary advertising.

Conclusion

This study has explored how nostalgia, when applied to advertising, functions not merely as a visual evocation of the past but as a dynamic process of reinterpretation that engages memory, emotion, and cultural continuity. Grounded in the concepts of collective memory and Santaella's Thirdness, the analysis has shown that nostalgic imagery becomes most effective when it transcends literal replication and instead recontextualises historical symbols within contemporary narratives.

Through visual experimentation with Polaroid photography, the research investigated how analogue materiality — particularly the chromatic palette, physical tactility, and temporal singularity of instant images — contributes to the perception of authenticity in nostalgic advertising. The selected photographs served not as finished advertising pieces but as conceptual visualisations that simulate aesthetic strategies frequently used in campaigns seeking to connect emotionally with their audiences. Polaroid photography's enduring cultural resonance stems from its ability to transform image-making into a sensorial and participatory act. Each photograph becomes a unique artefact, reinforcing affective immediacy often diluted in digital formats. In this context, the analogue image does

not merely depict a past moment — it materialises it, embodying a fragment of time that can be reactivated in the present.

Ultimately, this study positions nostalgia not as a static aesthetic but as a communicative device that can bridge tradition and innovation. By mobilising imagery that evokes shared cultural references while adapting them to contemporary sensibilities, nostalgic advertising has the potential to foster emotional resonance and reinforce perceptions of authenticity — not by replicating memory, but by reimagining it.

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REFERENCES

Antunes, J. (2023, December 28). Your next camera: the LEGO Polaroid OneStep SX-70. *ProVideo Coalition.* https://www.providecoalition.com/your-next-camera-the-lego-polaroid-onestep-sx-70/

Barthes, R. (1980). *Camera lucida: Reflections on photography*. Nova Fronteira.

Buse, P. (2016). *The camera does the rest: How Polaroid changed photography.* University of Chicago Press.

Boym, S. (2001). The future of nostalgia. Basic Books.

Burke, P. (1997). Varieties of Cultural History. Cornell University Press.

Boym, S. (2001). *The future of nostalgia*. Basic Books.

Burke, P. (1997). *Varieties of cultural history*. Cornell University Press.

Eaton, K. (2024, January 24). Apple embraces Mac nostalgia, reviving a marketing masterpiece. *Inc.* https://www.inc.com/kit-eaton/apple-embraces-mac-nostalgia-reviving-a-marketing-masterpiece.html

Halbwachs, M. (1990). *Collective memory* (L. L. Schaffter, Trans.). São Paulo, Brazil: Edições Vértice. (Original work published 1950)

Lammersma, M., & Wortelboer, S. (2017). Millennials purchasing the good old days: The effects of nostalgic advertising on brand attitude and purchase intention among millennials (Master's thesis, Jönköping University). Jönköping University Library. https://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-35785

Lindstrom, M. (2011). *Brandwashed: Tricks companies use to manipulate our minds and persuade us to buy*. Crown Business.

Natali, M. P. (2006). *The politics of nostalgia: A study of forms of the past*. Nankin.

Niemeyer, K. (Ed.). (2014). *Media and nostalgia: Yearning for the past, present and future*. Palgrave Macmillan. https://doi.org/10.1057/9781137375889

Niemeyer, K. (2018). The power of nostalgia. In L. Santa Cruz & T. Ferraz (Eds.), *Nostalgias and media: In the kaleidoscope of time* (pp. 29–45). E-Papers.

Pichierri, M. (2023). *Nostalgia marketing: Rekindling the past to influence consumer choices*. Palgrave Macmillan. https://doi.org/10.1007/978-3-031-20914-7

Santaella, L. (1983). *What is semiotics?* Editora Brasiliense.

Sedikides, C., & Wildschut, T. (2019). The sociality of personal and collective nostalgia. *European Review of Social Psychology, 30*(1), 123–173. https://doi.org/10.1080/1046328 3.2019.1630098

The third edition of the Cross Media Arts series is a constellation of creative practices relevant to social, ecological, and epistemic transformation. The projects assembled here address alternative ways of knowing, creating, and acting in the world through cross-disciplinary collaborations, involving artists, designers, researchers, and communities. From site-specific interventions and digital or physical interactions to participatory installations and performances, the works in this volume reflect a commitment to critical engagement, commonality, and care for both human and more-than-human issues. Edited as an assemblage, this volume reveals an eclectic and broad continuum of practices that question prevailing perspectives, encourage cohesion among individuals and their environments, and expand the field of social art and design as a space for listening, belonging, and emancipation.