

Making Things that Change: Reconsidering the Fluid Nature of Creative Productions in Research through Art, Design, and Craft

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ABSTRACT

Creative productions are integral to research conducted through practices of art, design, and craft. While their significance to the generation of knowledge is increasingly recognized, productions of this kind remain deemed discretized research components. This paper illustrates how they can be better understood as fluid assemblages that enact and are enacted by change. Through a diffractive reading of nine examples of research conducted by ourselves, the paper shifts from a perspective of neatly defined outputs to one of systemic affect. We conclude by interrogating the continuity of these productions beyond academia and urging a reassessment of their broader societal value.

Introduction

Three decades after the first institutional efforts to legitimize creative work as a vehicle of academic inquiry (see Frayling, 1993; Malins & Gray, 2000; Strand, 1998, as cited in Källemark, 2011), artistic and practice-led research¹ have contributed cutting-edge knowledge on a wide variety of subject domains. Spanning thematic concerns such as creative processes and practices (e.g., Nimkulrat, 2012; Rajmakers, 2007), education and learning (e.g., Marqués Ibáñez, 2017; Mäkelä & Löytönen, 2017), individual and environmental well-being (e.g., Schmid, 2017; Sweet, 2018), or the pursuit of more just and equitable living conditions (e.g., Garduño García, 2017; von Busch & Palmås, 2023), research led by practices of art, design, and craft has been characterized by the inclusion of creative productions that play a formative role in the generation of knowledge (Biggs & Karlsson, 2011; Stappers & Giaccardi, 2017). Typical examples of these productions include artifacts, artistic experiments, design prototypes, workshops, exhibitions, and other kinds of deliberately configured things or situations that yield research material leading to the development of new insights.

Today's forms of art, design, and craft operate on a multiplicity of scales, platforms, and media that afford a growing array of methodological approaches to research practice. This circumstance increasingly speaks of how the creative productions that bring operational significance to research through art, design, and craft are not limited to the presentation of finished outcomes but also accommodate processes in the making. In the face of artistic and practice-led research coming of age, this paper discusses how practitioner-researchers have begun to push the epistemic frontiers of art, design, and craft to a point where such creative productions have explicitly become assemblages of fluid things (see Giaccardi, 2019; Redström & Wiltse, 2018). Drawing on examples from nine research projects conducted by ourselves, we reconsider the changing nature of creative productions in research through art, design, and craft, foregrounding the urgent need to shift from a perspective of creative productions as clearly delineated outcomes to one of fluidity and systemic affect.

The examples we present here, which are further delineated in Section 3, involve the creation of more-than-human communities of practice (authors 3, 5, and 8), curated public engagement programs (authors 4, 6, and 7), sociomaterial experiments

(authors 1, 2, and 9), and the relationship of these things to processes of organizing, conducting, and disseminating research. The questions of *whether* and *why* these kinds of creative productions qualify as research vehicles has been extensively debated elsewhere (Bang et al., 2012; Mäkelä & Nimkulrat, 2018; Roth, 1999). However, literature detailing the changing roles, meanings, and interpretations of these productions and how they influence the continual framing and re-framing of artistic and practice-led research remains scarce. This aspect creates further difficulties in assessing the relevance of artistic and practice-led research to contemporary society (see Elo, 2022). Without a comprehensive understanding of how these productions evolve and how this evolution affects their reception, it is difficult to determine their significance in broader cultural and academic contexts. The main contribution of this paper is thus to signal the need to update the foundations and validation mechanisms upon which these knowledge-generating practices rest.

In what follows, we provide an overview of the role of creative productions in artistic and practice-led research, outlining the concept of *knowing through making* (Mäkelä, 2007) to subsequently argue for an emerging paradigm of *knowing through 'making things that change.'* We then proceed by presenting the nine examples and discussing them in relation to one another. Rather than casting artistic or practice-led research into stable categories, the examples are used to highlight the multiplicity of perspectives and positionalities that can be adopted in the field, showcasing the richness of artistic, designerly, and craft-dexterous expression as well as its many possible ways of academic articulation. In doing so, we engage in a diffractive reading of the examples (see Barad, 2007, 2014; Haraway, 1997), emphasizing their polyvocality and discussing the effects of interweaving multiple perspectives and positionalities in a study like this.

Knowing through making

Many studies have outlined how creative productions in research through art, design, and craft can be explored, validated, and conceptualized. We extend previous work on the role of artifacts and prototypes as contributors of discourse (Seago & Dunne, 1999), detailing how they serve to address research questions and document research processes (Mäkelä, 2007). We also acknowledge how artistic and practice-led research activities

transcend the assembling of researcher-artifact-knowledge to engage other entities, agencies, or relationships on various levels (Vega et al., 2021). The literature presented here is by no means exhaustive since it focuses on topical examples examined from our limitations in terms of language, access, and time. However, it is taken as a starting point for future studies. We anchor these concerns by providing an overview of how creative productions in artistic and practice-led research have been previously explored and, especially, how they function as dynamic participants in processes of scholarly inquiry.

Artifacts in research through art and craft play various roles. They can serve as research outputs, tangibly communicating the knowledge outcome and representing the culmination point of the creative process (Mäkelä, 2007). Works serving this role are typically presented, exhibited, or shared with audiences as carriers of knowledge, albeit with written externalizations of their claims (see Biggs, 2002). Another common role that artifacts play in this tradition is as a method of investigation (Niedderer & Roworth-Stokes, 2007). In these cases, making artifacts is integral to the research process, as it provides a creative tool for exploration and experimentation. A similar role is observed when the process of making artifacts affords a means of data generation (e.g., Nimkulrat, 2009) or an enactment of the research question (e.g., Groth, 2015). Further, making artifacts can be used as a means of documentation (Mäkelä & Nimkulrat, 2018), a technique deemed critical for retrospective reflection and the articulation of the researcher's tacit knowledge.

Research through design also highlights the formative role of designing and making in the generation of new insights (Stappers & Giaccardi, 2017). This mode of research is characterized by material-driven explorations, experiments with target users, and, more specifically, prototyping. Classic examples of prototyping in the literature include the creation of methods of data collection (e.g., Mattelmäki, 2006), instruments to record and measure phenomena (e.g., Mackey et al., 2017), experimental components to test hypotheses (e.g., Wensveen, 2005), or physical objects to ensure a better comprehension of the research problem (e.g., Dunne, 1999). The insights gained through making and prototyping can inform the design process, determine the evolution of the desired outcome, and contribute preliminary answers to the research question. In all cases, prototyping is deemed an iterative process, and it sometimes leads to new hypotheses, generates

further questions, or prescribes directions for future research.

Despite its legacy in championing the central role of creative productions in research through art, design, and craft, the literature in the field tends to downplay the transformative aspects of these productions. Research conducted through practices of art and craft often emphasizes artifacts as meaning carriers rather than meaning makers. Although there is a shared understanding that the outcomes of research in art and craft hold various agencies (see e.g., Biggs, 2002; Sweet, 2018), the exploration of their potential in disrupting or affecting the research context within and beyond the research timeframe is still limited. This leads to a static understanding of creative productions and a distancing between what these things *are* and what they *do*.

We observe a similar situation in research conducted by means of design practice. While the focus on the prototype denotes a preoccupation with iteration and change, it also comes with a tendency to portray prototyping as a 'stage' of designing or as a discrete phase of the research process. What happens after or how prototypes evolve is often overlooked, raising the question of how the potential continuity of a design project could still fit within a predetermined research design. Additionally, prototyping in research involves the deliberate configuration of sociomaterial situations, in which the prototype does not aim at representing a specific portion of reality but rather at transforming it (Vega, 2022; Zimmerman & Forlizzi, 2014). This only indicates that what is being prototyped is not a mere operational component of the research but the whole research practice as such.

Diffraction ways of knowing through making

As we discuss *things that change*, diffusing considerations and discussions becomes essential. How can we more integrally move from the act of individual reflection in artistic and practice-led research to acknowledge the fluidity that such modes of inquiry entail? This study is based on a collection of primary source documents and narratives— i.e., a dataset comprising (mostly) published research through art, design, and craft carried out by us. With the intention of achieving a polyvocal and critical account of this collection, we engage in a diffractive reading as proposed by feminist scholar Donna Haraway (1997) and further articulated by philosopher Karen Barad (2007, 2014).

A diffractive reading reckons that discourse and matter (or *things*) are mutually implicated in the production of knowledge (Taguchi, 2012). This analytical approach distances itself from the traditional and highly valued act of reflexivity (such as, e.g., the notion of reflective practice in artistic and practice-led research), where one records the experiential aspects of their practice and revisits them individually to achieve new thinking and draw conclusions (see Mäkelä & Nimkulrat, 2018; Pedgley, 2007). In these cases, reflexivity works as an act of ‘mirroring’, where the researcher’s perspective is taken as the position around which discussions revolve. In response, a diffractive reading proposes multiple readers and voices to engage in collective reflection, with all individuals and data sources affecting one another through the exposition of differences. This theoretical-methodological choice allows us to re-read our “experiential knowledge [as practitioner-researchers] without being limited to individuated perspectives” (Vega et al., 2023, p. 5). Further, it allows us to reconsider how the things we make have the ability to change and *change us*, allowing for a richer understanding of their affective potential within and beyond the realm of our research practices.

Our methodology thereby consisted of inviting multiple concomitant readings of the published research through an analysis informed by notions of change, which are central to this paper. While each author was able to indicate a scope of data to be studied (and allow for a consideration of its context), the discussions that emerged from the readings did not reside within the single authors themselves but rather initiated a polyvocal interpretation. In this way, we conducted the analysis by recounting specific aspects of our ongoing practices of art, design, and craft rather than performing them anew to generate original empirical material. This diffractive reading resulted in the three categories proposed in the following section.

Making things that change

We refer to creative productions as *things* rather than artifacts or prototypes (see Deleuze & Guattari, 1987; Ingold, 2013), taking into account their relational condition as processes *in the making*. Things, in this context, are ‘fluid assemblages’ (Giaccardi, 2019; Redström & Wiltse, 2018) of already existing material objects, flows, and forces with no clear beginning or end. The concept



Figure 1. Alusta pavilion during the summer of 2023.
Photo: Maiju Suomi

EXAMPLE (PUBLISHED OUTPUT)	CHANGING THING BEING MADE	MAIN ELEMENTS INVOLVED IN ITS MAKING	TYPE OF FLUID ASSEMBLAGE
Author 1 (Vega et al., 2023)	A workshop aimed at prototyping a transcultural pottery practice	Workshop participants, clay and other material supplies, tools and equipment, cultural symbols, peripheral practices (e.g., established ways of making pottery that informed the making of the workshop)	Sociomaterial experiment
Author 2 (Valle-Noronha, 2019)	Shape-shifting garments produced via experimental pattern-cutting and practices of wearing, washing, ironing, and folding	Clothes, users, peripheral practices (e.g., how users' habits and behaviors contribute to the transformation of the garments)	Sociomaterial experiment
Author 3	A knitting practice inviting more-than-human agencies as co-creative partners	Practitioners, knitting tools, post-consumer plastics, the material environment and its effects on the making process (e.g., how plastic waste permeates contemporary craft discourse)	More-than-human community of practice
Author 4 (Latva-Somppi, 2022)	An evolving exhibition comprised of open studio practices, a living laboratory, and a series of public engagement activities	Craft practitioners, scientists, soil samples, material artifacts, environmental discourses, the public (e.g., visitors and their input to the exhibition)	Curated public engagement program
Author 5 (Hulkkonen et al., 2023)	A collaborative glassblowing practice focused on analyzing human/nonhuman movement	Glass, practitioners, tools and equipment, the material environment and its effects on the making process (e.g., the studio setting and how it is adapted to comply with research standards)	More-than-human community of practice
Author 6 (Falín, 2022)	Clay-based multimedia workshops and installations intended to investigate the aesthetic dimension of slow, contemplative work	Workshop facilitators, clay, installations, the public (e.g., participants and visitors and their influence in the research process)	Curated public engagement program
Author 7 (Korolainen, 2022)	A series of peer-reviewed exhibitions dwelling on the artist's sources of inspiration	Material artifacts, curatorial guidelines, sources of inspiration, the public (e.g., visitors and their input to the exhibition series)	Curated public engagement program
Author 8 (Suomi & Mäkelä, 2023)	An architectural pavilion designed to integrate with nature	Planning team, building materials, builders, pollinating insects, the material environment and its effects on the making process (e.g., how seasonal change affects the pavilion)	More-than-human community of practice
Author 9	A collective, online-based practice of naturally fermented bread baking	Sourdough, bakers, information technologies, baking literacy, peripheral practices (e.g., the rise of videoconferencing habits brought about by the covid-19 pandemic)	Sociomaterial experiment

Table 1. Data synthesis

of fluid assemblage underscores that the connections between the elements that configure these things are never fixed or predetermined but are instead open-ended, heterogeneous, and emergent. From this point of view, creative productions bare a potential for transformation, adaptation, and contingency, regardless of their role in research. Most importantly, their fluidity depends on what other things and people do with them, calling into question the agency of the researcher and, by implication, notions of authorship, responsibility, and accountability (see Vega et al., 2023). Table 1 synthesizes the research outputs examined in this work, outlining the changing thing that was made in each example, the main elements involved in its making, and the type of fluid assemblage that emerged as a result of the analytical procedure described above.

It is noteworthy to acknowledge that the examples presented here can be understood as moving across multiple categories or types of fluid assemblages. For the sake of clarity and due to the limited space, nevertheless, we have opted to focus on the one category that each example best represents. Each of these categories is detailed in the following subsections, outlining how the creative productions of our research practices affect and are affected by the multitude of actors, human or otherwise, that participate in their making.

More-than-human communities of practice

Architect Maiju Suomi questions anthropocentric models of creation. Her research explores the making of architecture in the more-than-human world (Suomi & Mäkelä, 2023), speculating on the concept of care as an alternative basis for the production of inhabitable spaces. Central to Suomi's research is the making of the *Alusta* pavilion (Figure 1), a temporary intervention in Helsinki that functions as a platform for multispecies encounters. The pavilion is open to all audiences and designed to allow for the well-being of humans and nonhumans, especially pollinating insects. During its design process, a diverse array of stakeholders (e.g., ecologists, clay builders, producers, as well as the material environment) had an effect on the form the space took. The space is constantly changing, with raw clay elements eroding by the movements of air and water; perennials growing, flourishing, and withering; and fungi-inoculated woodblocks gradually turning into new soil.

Glassblower and teacher Sara Hulkkonen also interrogates human exceptionalism, asking what kind of movement happens during glassblowing processes and why this movement happens. Departing from the collaborative nature of glass studio practice, she and her colleagues (Hulkkonen et al., 2023) investigate the movement of human and nonhuman actors involved in the process of working with hot glass. When looking beyond the physical work of the lead glassblower, a more-than-human aspect arises and becomes the focus of inquiry: the inseparability of things and people in motion. The low viscosity of molten, incandescent matter affects the movements of the practitioners, who immediately synchronize their movement with that of the glass. Exploring the becoming of the practice and its actors speaks of a way of embodied thinking that can only exist *with* and *through* the material.

In a way that also emphasizes material thinking, artist and educator Gary Markle poses the question of whether we make craft or craft makes us. He interrogates the source of creative impulse by de-centering human agency and inviting others (i.e., post-consumer plastics) to the collaborative craft of finger-knitting (Figure 2). Following the natural flow of studio practice, the making is open to change as it progresses: the process of creating together affects the author as well as the creative outcomes. Markle's work underscores that the relationship between maker and material should be seen as a symbiotic process. Maker and material are considered equals, and both actively contribute to the formation of what he refers to as 'craft consciousness'. In short, this project seeks to challenge perspectives of anthropocentric power relations and work with the hypothesis that craft processes and products equally shape human evolution.

As illustrated above, Suomi, Hulkkonen, and Markle pursue a type of research in which developing creative productions implies building and sustaining more-than-human relations, sharing knowledge and skills, and exploring alternative modes of collaboration. A common aspect between their diverse approaches is a sensitivity to the flow of materials underpinned by practical expertise: they all emphasize the importance of thinking with the environment and its circulating materialities, whether this is achieved through the making of large-scale structures designed to integrate with nature, the synchronization of movement between hot glass and a team of glassblowers, or the utilization of post-consumer plastics that otherwise would turn into waste. Far from developing stable



Figure 2. Expanded finger knitting tool and post-consumer plastic tape collaboration. Photo: Juss Heinsalu

artifacts or focusing on presenting snapshots of their research practices, these three authors examine such practices as they evolve, expounding how the creative productions that operationalize their research depend on the contingencies of organizing around spatial contexts, material resources, knowledge domains, practical tasks, and practitioners. What changes in these examples is the practice itself, regardless of whether or not it is the focus of research.

Curated public engagement programs

Designer and artist Hanna-Kaisa Korolainen investigates the making of inspiration in creative work. Her doctoral dissertation (Korolainen, 2022) approaches this topic through her artistic practice. She produced three peer-reviewed exhibitions comprising numerous artifacts (i.e., ceramics, glass, and hand-tufted textile pieces) that together materialized the influence of her sources of inspiration. The artifacts of the exhibitions served both as informants and as methods, emphasizing the idea that not all creative insights can or should be verbalized. Korolainen also explored notions of being inspired through neighboring themes such as imitation, intertextuality, copying, and appropriation, questioning issues of authorship and deeming

sources of inspiration active participants in the creative process.

Artist and curator Riikka Latva-Somppi explores the ways in which craft can transcend the intimate maker-material relationship to become a vehicle of environmental awareness. Grounded in knowledge work involving soil-based materials and their workers (i.e., ceramic artists and environmental scientists), her research (Latva-Somppi et al., 2021) focuses on the potential of human-soil relations to initiate collective action and interdisciplinary collaboration. The study evolves through cycles of studio practice and fieldwork, exploring novel ways to present both the processes and the outcomes of these collaborations in exhibitions (Latva-Somppi, 2022). The interdisciplinary dimension of the project deeply affects the directions of the practice as well as the author's understanding of it. Correspondingly, collaborators and exhibition visitors are affected by the work, consolidating a potential call for collective action.

Based on a different approach to ceramic practice, artist Priska Falin investigates the experiential aspect of making, emphasizing its aesthetic dimension through processes of slow, contemplative work. In her doctoral thesis (Falin, 2022), she compares traditional hand-making processes and 3D-printing

techniques, allowing for a multi-modal understanding of how the body experiences, performs, and becomes sentient through working with clay. Her research aims to change the focus from end results to the experience of making, using a variety of artistic means such as pebble-making, video installations, and workshops (Figure 3). While her research departed from a personal, practice-led approach, Falin's focus shifted towards collaboration as she started working with other practitioners and co-facilitating workshops. These collaborations became an ongoing process that naturally escaped the logic of being one-time projects.

These seemingly disparate examples share a common interest in infrastructuring their object of study. Whether they take the form of an evolving collaborative practice, a string of iterative exhibitions, or a series of workshops and multimedia installations, the creative components in these examples serve as a medium to elicit creative processes and simultaneously investigate them. The key aspect here is that collaborative practices, exhibitions, and workshops are modes of infrastructuring that transcend mere technical or material configurations to encompass social dynamics, cultural norms, and institutional politics. These types of creative productions provide fertile ground

to explore participatory, curatorial, and pedagogical modes of doing artistic and practice-led research. However, they also come at the expense of being subject to unforeseeable systemic factors. Creative productions of this kind demand practitioner-researchers to navigate the tension between anticipation and adaptation, as well as to negotiate between one's creative vision, the eventual direction of the research project, and the evolving needs of stakeholders. Enduring such a multitude of changing conditions is integral to developing this type of research, so it should be considered a fluid methodology in its own right. Because this way of conducting research cannot preexist the actual creative practice, the thing that changes in these examples is the research design.

Sociomaterial experiments

Clothesmaker Julia Valle-Noronha asks how design can affect the relationship between people and the things they wear. Departing from the hypothesis that different clothes produce different affects, she creates a series of garments via experimental pattern-cutting and deploys them to individuals through "wardrobe interventions" (Valle-Noronha & Wilde, 2018). The garments are investigated in



Figure 3. An experiential installation inviting contemplation through pebble making. Photo: Ari Karttunen

a two-year longitudinal study based on auto- and applied ethnographies, focusing on how clothes change throughout time and inviting more active engagements through shapes that highlight transformation (Figure 4). Her study offers a new gaze to current fashion theories, challenging the prevalent notion of clothes as static receptacles of meaning (Barthes, 1990; cf. Negrin, 2016) and looking at them instead as fluid agents invested in their ability to affect individuals, behaviors, and relationships (Valle-Noronha, 2019).

With a similar focus on relationships, designer and educator Luis Vega investigates how practice-led design research can account for the thoughtful dimension of making beyond the scale of individual practice. Assuming the roles of facilitator and participant in a collaborative workshop entitled *Transcultural Pottery* (Figure 5), he makes pots with people to contest individualized modes of thinking through making (Vega et al., 2023). The workshop shifts focus from the mere making of pots to the making of a new, unorthodox, and pluralized pottery practice, in which traditional culture-specific boundaries (e.g., master-apprentice, facilitator-participant, designer-maker, and researcher-practitioner) are not assumed in advance but continually negotiated in practice. This

approach allows for the elicitation of processes of *distributed thinking through making* (Vega, 2021), a term he coined to decenter the figure of the practitioner-researcher from the knowledge production process.

Designer and baker Gianluca Giabardo also dwells on relationality by studying our symbiotic connection to food. Through the practice of naturally fermented bread baking, his research aims to challenge current sociotechnical-(un)ecological alimentary paradigms and explore convivial understandings of evolution and survival. Central to this endeavor is *Collective Culturing*, an experiment where he bakes bread while fostering social and material relationships around sourdough culture. The experiment engages a group of practitioners who, amid the outbreak of the covid-19 pandemic, started gathering online to exchange baking recipes and outcomes. By being a participant in his own experiment, Giabardo experiences the vitality of his creative production from within. This perspective is critical to conceptualizing baking as a process that can only exist in relation to the becoming of other actors, such as flour, water, bacteria, other individuals, the technologies that enable their online gatherings, and the things they all cultivate together.



Figure 4. Shape-shifting dress photographed before and after washing. Photo: Julia Valle-Noronha



Figure 5. A workshop was designed to challenge individualized ways of making. Photo: Luis Vega

The examples presented above elucidate how social doings and material things are constitutively entangled and actively shape each other (Orlikowski, 2007). A key aspect here is the collapse of conventional understandings of materiality, as materials not only encompass discrete substances like fabric, clay, or sourdough but also concern sociocultural determinants such as values, expectations, and shared meanings. What is more, in these examples the researchers themselves become research materials, specifically by acting as participants, informants, and respondents of their own experiments. The entangled condition of the researcher and the researched amounts to a process of becoming-with (Deleuze and Guattari, 1987), in which the phenomenon under investigation transforms the investigator and vice-versa. This process of mutual transformation shows how boundaries are not fixed or predetermined but dynamically reconfigured *in and through* inquiry (Barad, 2007). Change is thus not limited to the creative production itself; it also affects the researcher and the necessary but not easy-to-draw boundary between practice and research—a boundary whereby the creative practice is rendered researchable.

Discussion

This paper has highlighted the fluid nature of creative productions in research through art, design, and craft. Based on a diffractive reading of our own research practices, we have explored how artistic, designerly, and craft-dexterous modes of knowledge production engage in the making of things that change. Our illustration of these things as more-than-human communities of practice, curated public engagement programs, and sociomaterial experiments is by no means exhaustive. Nevertheless, it signals a key shift towards maturity in artistic and practice-led research: these modes of inquiry are increasingly seeking to anchor themselves in social practice. Below we discuss the implications of this shift and reiterate the need to reconsider what creative productions are and what they do within and beyond formal research. We further suggest that to characterize the making of things that change as an emerging research paradigm, more studies are needed to define other forms of fluid assemblages and their methodological implications.

The inclusion of multiple stakeholders in the making of the creative productions that operationalize research through art, design, and craft suggests that practitioner-researchers are transitioning towards being facilitators/collaborators rather than

individual experts. This aspect casts major implications for educational programs and formal training in the field, which should deliberately inculcate the skills needed to smoothen such a transition. In the quest to understand what and how artistic and practice-led research can contribute to society (see Elo, 2022), it is imperative to ensure that practitioner-researchers *in the making* also understand the changing nature of their fields and are provided with appropriate tools to navigate these changes. We see an eagerness in artistic and practice-led research to proliferate, although it is rare to observe the same speed of growth within departmental units of long-established academic communities.

The rising advent of workshops, exhibitions, living installations, and other types of socially engaged activities in research through art, design, and craft sheds light on the significance of public participation and the popularization of findings across various audiences. While these types of creative productions are not new, they have gained renewed importance since they increasingly address current eco-social crises. Following previous research, we suggest that creative productions of this kind need alternative processes, formats, and channels of knowledge dissemination (Giaccardi, 2019; Latva-Somppi, 2022). Some of these forms of dissemination are already integrated into the creative process itself, for example, in the implementation of workshops or exhibitions. However, the type of knowledge disseminated therein typically engages non-academic audiences, creating new questions about what types of publics gain access to which information and how, as well as how this information is re-used by communities that may be out of the original radar of artistic and practice-led research.

Another aspect worth discussing is that socially engaged research is never exempt from ethical questions. As we discussed throughout this paper, the contingent nature of creative productions in today's research through art, design, and craft may implicate new ethical considerations and modes of accountability. This paper has offered a window into the material nature of creative productions. By 'material,' we mean that decisions made to comply with either practice or research agendas have real consequences. The processes of materialization involved in the making of things that change, especially in the traditions of artistic and practice-led research, rely on tacit knowledge and implicit assumptions. While it is the job of practitioner-researchers to uncover these assumptions

explicit, socially engaged processes of materialization may render this task tremendously more difficult. Creative productions may benefit research processes and knowledge outcomes, but they may also generate unexpected resolutions of reality that can affect others. As Barad (1996) points out, researchers are still "agentially positioned and accountability is mandatory" (p. 187).

The contribution of this paper to artistic and practice-led research is thus manifold. It illuminates the changing role of artist/designer/craftsperson-researchers and how the things they create affect society. As we have discussed above, this aspect prompts a reconsideration of the educational apparatuses where such research is embedded today, and it invites practicing researchers in the field to collectively re-evaluate their skills, mindsets, and attitudes, as their practices may extend beyond the domains of art, design, and craft into uncharted territories. Examining the nature of these emerging skills, mindsets, and attitudes seems to be a vital avenue for future research. Finally, we have deemed crucial to address how creative productions engender new material realities.

Inviting others to participate in the making, designing, or crafting of one's research practices not only requires assuming responsibility for how these practices are articulated in scholarly outputs, but it also exposes the whole research process to different publics, which may in turn affect the contemporary place of artistic and practice-led research in policy-making, funding decisions, and societal discourse at large. Making things that change warrants critical attention to what these things do and what is done with them in return.

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Endnotes

1 We use the term *artistic research* to denote a scholarly mode of knowledge production in which artmaking constitutes the primary method of investigation (Varto, 2018). In the same vein, our usage of the term *practice-led research* conforms to the idea of a design and/or craft practitioner undertaking a creative project “subservient to stated research aims and objectives” (Pedgley, 2007, p. 463). We take both terms together to express what we call *research through art, design, and craft* (for an overview of our construal of this expression, see Vega et al., 2021).