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Generosity in more-than-human design

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Abstract: Generosity for more-than-human design suggests an openness to change in grappling with human exceptionalism and nonhuman entanglements. Yet the risks of generosity in design practice are largely unarticulated, and it is unclear how designers might practically encounter and navigate them. In response, I first position generosity within feminist theory of intercorporeality as an open dispossession and material exchange that is pre-reflective and asymmetrical. This articulation accounts for nonhuman organisms, objects, and agencies as inseparable from what it means to be a person, affectively and bodily. I then present three design cases of my own that situate generosity in design practice. This includes specifying the relations explored, presence of openness, risks encountered, and applied findings. From these, I discuss the deliberate centering of the human designer and how practically engaging with an intercorporeal model of generosity problematizes some more-than-human relations as *more* more-than-human than others.

Keywords: generosity; more-than-human; first-person; autotheory

1. Introduction

Generosity is a useful concept for more-than-human design because it calls upon designers to grapple with ignored, obscured, or unknown relations that contribute to harmful hierarchies and destructive trajectories. It suggests an openness to change in pursuit of how design might be and do “better”, and for who or what “better” is defined. This might include unsettling expected ways of doing design (Fry, 2020; Göransdotter, 2020; Rosner, 2018), exploring new relations with digital materials (Giaccardi & Redström, 2020; Wiltse, 2020), or pursuing a plurality of livelihoods among humans and across species (Ávila, 2022; Escobar, 2018; Westerlaken, 2020). While such approaches together strive for more socially and environmentally just futures, openness and change are also acknowledged as risky alongside the potential of designerly uncertainty, humility, and vulnerability (Wakkary, 2021). Yet, the definition of generosity and its potential risks remain largely implied within more-than-human design, and it is unclear how designers might practically encounter and navigate risks in designing for interdependence and reciprocity. In response, to explore how generosity



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might better support more-than-human design, I present three of my own interrelated design cases that situate the theoretical concept of generosity in practice.

In the following, I first position generosity within feminist theory of intercorporeality and more-than-human design. From this, I articulate it as an open dispossession and material exchange that is a threat to human bodily integrity. This articulation accounts for more-than-human relations — nonhuman organisms, objects, and agencies — as inseparable from what it means to be a self and recognizes the potential for unanticipated social and material outcomes amid thinking with entanglement. Next, I present three interrelated design cases from my breastfeeding experiences, which draw upon first-person approaches. This presentation includes a brief description of their motivation, how they are situated within a more-than-human design agenda, and the applied findings or generalizable knowledge contributed. I then specify the relations and exchanges explored, and I reflect upon the foreseen risks and unforeseen dissonance encountered in regards to bodily boundaries and personal integrity. Following the three design cases, I discuss the deliberate centering of the human designer and how practically engaging with generosity problematizes some more-than-human relations as *more* more-than-human than others.

2. Generosity in theory

2.1 Feminist intercorporeality

Generosity is often understood as giving more than expected or necessary. As a Western virtue, it is grounded in the individual right and choice to give with the expectation of an ongoing giving and receiving (Mauss, 1990). Yet such a positioning of morality and exchange is located within problematic histories of power and inequality in which the gifts of some, such as property owners and wage earners, tend to be acknowledged and remembered more than the gifts of others, such as women and indigenous peoples (Diprose, 2002). This is seen within a politics of reproduction (Hausman, 2004) and the earth as an abundance of natural resources to be continuously taken and forgotten (Kimmerer & Burnett, 2021)6/16/2024 2:35:00 PM. Such critiques of generosity draw attention to “the systematic, asymmetrical forgetting of the gift” that ground social and environment injustice (Diprose, 2002), and that in response emphasize intercorporeality and interdependency.

Rosalyn Diprose positions generosity as “not the expenditure of one’s possession but the dispossession of oneself, the being-given to others that undercuts any self-contained ego” (Diprose, 2002, p4). This definition is informed by Derrida on the gift (1992), which understands giving as possible only if it is forgotten and unrecognized, and *différance* (1982), which is the dispersal of the self into the other that constitutes both identity and difference. Diprose borrows from this account of the impossibility of gifting, but shifts towards “the asymmetrical distribution of the effects of its operation” in personal and social formation that is “carnal and affective” (Diprose, 2002, p9). That is, generosity might manifest in invisible silence, but its condition is through a social and material openness to others. This moves away from generosity as a character trait guided by thoughtful choice, as such an

assumption is grounded upon the individual as already corporeally constituted, self-reflexively separate from others, and with recognized rights. In doing so, it shifts beyond Derrida toward questions of social justice and the embodied and corporeal dimensions of giving. As a pre-reflective openness, Diprose argues that generosity is a primordial condition of intercorporeality and communal existence.

In “remind(ing) us that every life is dependent upon a whole range of openings to other lives”, Hird (2007) further grounds generosity through the literal giving and receiving of matter, which is exemplified through the material processes of pregnancy, child birth, and breastfeeding. This includes nutrients, DNA, viruses, and other matter gifted through the placenta and milk that are a “radical opening up to unknowable events [with] the potential threat of harm through unanticipated possibilities” (Hird, 2007), such as a premature birth and fetal immunity. This uncertainty and indeterminacy of material agencies highlights generosity as a threat to human bodily integrity and challenges notions of the individual as bounded and discrete. It also highlights opportunities for new possibilities when “becoming is always becoming with” (Haraway, 2008, p244) a diversity of bodies that includes humans and nonhumans, living and nonliving, as inseparable from what it means to be a self.

This feminist intercorporeal positioning of generosity is in line with posthuman critiques of human exceptionalism and rigid hierarchies of classifying “others” (Shildrick, 2019). It resists reductionism in an openness to difference and an ongoing questioning of what makes “one” (Puig de la Bellacasa, 2017) that might be beyond control and certainty as a person or as a designer. This means that one does not always choose or have a choice to give or receive something that impacts their being in the world. Dunlap describes potential frictions in living with the ongoing interactions between ideas, things, and people as dissonance (Dunlop, 2023), and Kimmerer emphasizes respect and gratitude in acknowledgement of flourishing as mutual but not neutral or homogeneous (Kimmerer, 2020). Together, these highlight the potential for unanticipated outcomes and asymmetrical reciprocity amid thinking with entanglement and generously caring for the exchanges that constitute relations.

2.2 More-than-human design

The more-than-human turn in design is grounded upon relational ontologies that understand concepts such as human and nonhuman, culture and nature, and human and animal as entangled and always becoming (Forlano, 2017b). This is important in unmaking categorical binaries that contribute to species exceptionalism, environmental extraction, and some humans considered more human than others (Braidotti, 2022). In recognition of design as “deeply complicit in many structural systems of oppression” (Mareis & Paim, 2021), generosity is a relevant concept because it suggests an openness to difference that includes different ways of doing design and difference from doing design differently. In pursuit of more socially and environmentally just futures, it implies intimacy and vulnerability as designers question what it means to be human amid destructive hierarchies among people and across species (Helms, 2023).

In drawing upon Abram (1996), who calls for a new humility that considers human survival as dependent upon and in relation to nonhuman survival, Wakkary (2021) posits generosity as a form of horizontality that is a positioning of oneself as a human designer alongside other humans and nonhumans. This is in contrast with a vertical, privileged positioning of people that does not account for relational ways of being. Horizontality is investigated through Oogjes first-person accounts of learning how to weave, from which nonhuman presence and participation are revealed in fragile and precarious moments (Oogjes & Wakkary, 2022). Importantly, through these accounts, the human roles of visitor and novice are proposed as pathways to humility in a design practice.

A growing body of work explores vulnerability through the human body as a site of more-than-human inquiry. Wilde (2021) focuses on feces and the gut microbiome through autoethnography and participatory workshops. This transcends looking outward at socio-cultural humility to also looking radically inward at bacterial relations that contribute to human existence and experience. Nielsen and Almeida (2021) design with the immune system as a site of symbiosis and mutualistic care, and Bell et al. (2023) similarly regard the human body as a “multispecies assembly” through material explorations with their skin microbiome. These approaches align with conceptions of livingness (Karana et al., 2020) and the unpredictable outcomes of living materials (Camere & Karana, 2018) that consider risks of discomfort, contamination, and disgust (Ofer & Alistar, 2023; Senyildiz & Veselova, 2022).

Across this selection of more-than-human design, risk is often expressed in relation to humility, vulnerability, uncertainty, and unknowingness. In drawing upon indigenous scholarship, Key et al. (2022) discuss more-than-human risk as experienceable beyond people and inseparable from the material world. This includes the socio-political consequences of pursuing change as a designer and risking ridicule (Helms, 2023), and the ongoing uncertainty of design as ontological with unknowable possibilities of unintended outcomes (Giaccardi & Redström, 2020). This acknowledges asymmetrical reciprocity between materials, relations, and worlds (Key et al., 2022) and unresolvable, yet experiential, tensions in caring for wicked problems (Helms & Fernaeus, 2021). To build upon this body of scholarship and specify risks within more-than-human design, I draw upon a feminist intercorporeal perspective of generosity as not always deliberate or socially experienced, but also a pre-reflective disposition and a material sharing of oneself with uncontrollable and unanticipated outcomes.

3. Generosity in practice

The three design cases presented are a series of physical and textual explorations from my breastfeeding experiences. They include transforming milk into fiddling necklaces, knitting bras for lopsided breasts, and site-writing around breastfeeding. Each is motivated by a genuine felt need or curiosity as a white, able-bodied, cis-gender woman from North America and who resides in Northern Europe. As individual explorations, their motivation positions them among design memoirs (Devendorf et al., 2020), autobiographic design (Desjardins & Ball, 2018), and autotheory (Fournier, 2021). As a collection, they are situated

in challenging cultural preconceptions of humans as individual and bounded in the everyday nurturing and nourishment of children.

Breastfeeding as seemingly human-centric might appear at odds with a more-than-human design agenda, but is relevant for the following reasons. Milk as a gifting of bodily matter is often taken for granted and unacknowledged as a bilateral exchange of hormones and bacteria. This situates human bodily processes as a site of inquiry into the leaky materials and nonhuman agencies that blur boundaries between beings, species, and environments. As more-than-human design explores new material scales and ecologies, human-milk relations offer ways of apprehending diverse and collaborative possibilities. This methodologically builds upon first-person approaches that explicitly engage with decentering the human (and particular humans) in design by bringing to the fore relations and difference through critical self-reflection (Biggs et al., 2021; Liu et al., 2018; Nicenboim et al., 2023; Oogjes & Wakkary, 2022). It departs through its focus on intercorporeality through breastfeeding and milk, which grounds the first-person self as open and mutable – subjectively, affectively, and bodily – in relation to and through design.

For each case, I first give an overview that includes a brief description, how it relates to a more-than-human design agenda, and the applied findings or generalizable knowledge contributed. Next, I describe the relations and exchanges explored, which includes how I encountered or proceeded with perceived dissonance. Lastly, I reflect upon foreseen and unforeseen risks that ground the case in a posthuman and intercorporeal positioning of generosity.

3.1 Transforming milk into fiddling necklaces

Transforming milk into fiddling necklaces are material experiments to make personal ornaments to be worn during breastfeeding.



Figure 1 A fiddling necklace with casein plastic beads that are made from cow's milk.

This design case is situated in a more-than-human design agenda through its engagement with nonhuman agencies and multispecies relations. I wanted to make fiddling necklaces because I was frustrated with my child fiddling with the other breast. I desired to make them out of my milk so that I could give something from the breast that was taken away. The knowledge contributions are the material investigations, a fiddling necklace, and three ethical possibilities for designing with human bodily fluids. The first two contributions include successes in solidifying cow's milk and failures with human milk (as reported in Helms, 2021; Tsaknaki et al., 2021), and an example of a fiddling necklace made from milk (as reported in Helms, 2023). The three possibilities are intermediary knowledge in the form a generative resource for imagining how procedural ethics might be different to account for challenges in designing with bodily fluids (as reported in Helms, 2022).

My process began by making casein plastic from cow's milk (Brother, 1940), which was to avoid affecting our own milk supply until I was familiar with the process. During this time, I also learned that nipple fiddling might be a mechanism to stimulate milk production. I realized the contradiction in my naïve attempt to not interfere with our supply: our breastfeeding relationship would undoubtedly be affected regardless of the material used. This led to temporary doubt in my process, which eventually I resumed because of a personal desire to still preserve our milk. This was grounded in milk as unique to each mother-child relationship, temporally distinctive, and often not without physical and emotional challenges. Temporalities include changes in composition during a single feed to across an entire breastfeeding relationship. I sought to paradoxically capture this dynamism in response to uncertain bodily changes and the ongoing unfolding of our relationship.



Figure 2 From left to right: separating the protein casein by mixing warm cow's milk with vinegar, failing to separate casein from human milk, and mixing "magic powder" with human milk with resulting fumes

I next followed the same recipe for casein plastic with human milk. This failed due to compositional differences that I did not consider. I then purchased proprietary “magic powder” from an online craft store (MarkyBabyMilkJewelry, (n.d.)). This process resulted in fear as I worried that the fumes and unknown chemicals could be dangerous to myself, my partner, and our child. It also instigated another pause as my ontological understanding of fiddling necklaces extended from their physical form to their material composition. Their materials can leak, travel, and transform during the becoming of their form and through interactions with them. For example, this includes the fumes released by the mixing of milk and magic powder, and possible toxins transferred from the solidified milk through touching.

My initial design intent foregrounds the mother-child dyad as the primary relation explored. The decision to first experiment with cow’s milk highlights a reflective interpersonal risk of tampering with our milk supply. I encountered unforeseen dissonance upon learning that I am tampering regardless of the particular milk used. This recognized milk as agentic (Boyer, 2018) within a bilateral, yet asymmetrical exchange of hormones through touch. Designing across species of milks and considering them replaceable, draws attention to compositional differences that grounded my failure. It also foregrounds entangled histories of commodification and speciesism by not considering the impact on the milk supply of cows. This highlights tensions of multispecies care and unknowable risks beyond people within an intimate caring for human-to-human relations. My subsequent desire to preserve our milk recognized temporalities of biological materials that contribute to its agency and liveliness. Experimenting with “magic powder” further expanded our breastfeeding relationship to ecologies of unseen matter, such as toxins, that might be present in everyday spaces. In this way, possibilities of harm extended through how materials leak, flow, and travel among many bodies and across spaces.

3.2 Knitting bras for lopsided breasts

Knitting bras for lopsided breasts are two bras and knitting patterns that account for uneven and dynamic breast sizes. One is composed of differing cup sizes and the other is an adjustable wrap. This design case is situated in a more-than-human design agenda through its aim to unmake human bodies as symmetrical, stable, and fitting within normative ideas of what it means to be a woman or a mother. This troubles the bra as an everyday, universal artifact. Making bras for lopsided breasts was motivated by how my breasts would unevenly shift in size during a feed or a day, and then a more consistent noticing of one being generally larger than the other. The store-bought bras I owned did not account for such asymmetry and size fluctuation. The knowledge contributions from this design case include two bras and corresponding knitting patterns (as reported in Helms, 2021, 2023). The bras are instantiations of what garments for uneven breasts might be like. The knitting patterns are intermediary knowledge that extend my situation for others to adapt and use the patterns for the making of different bras for different bodies.

The first bra is based upon a bikini top, but with three “measuring cups”. This is opposed to two pieces of the same sized cloth to cover each breast. I altered a free pattern (Hatcher,

2003) by adding an additional third cup below the usual two and constructed them all in different sizes. This allows for varying pairs of measuring cups to be worn together and easily rearranged. Practically, they account for different volumes of milk for different sizes of breasts for different times of the day. Conceptually, the cups acknowledge perceptions of fullness as defined through felt experience and assumed milk secretion.



Figure 3 Configurations of three “measuring cups” for a first bra for lopsided breasts.

A second bra for lopsided breasts is based upon a wrap, such as used to carry or “wear” a baby. It is a single piece of material that varies in width across a significant length. I designed the knitting pattern by measuring myself with a piece of cloth wrapped in different configurations around my body. As the garment is wrapped and tied, the varying widths allow for subtle variations of positioning. This is for differing breast sizes to be decidedly supported, hidden, or accentuated. Practically, the bra accounts for an active and continuous shaping of breasts through minor or major adjustments, such as pulling or retying. Conceptually, the bra acknowledges breasts as inseparably in flux together.



Figure 4 Wrap configurations for a second bra for lopsided breasts.

Knitting as a way to design for unpredictable bodily unevenness was a postpartum activity to remake myself. This included reflecting upon the layered labors of knitting while care-taking, that often included knitting while walking and “wearing” my sleeping baby. This process spatially and temporally captured stitches, steps, and breaths of my mothering. Knitting, combined with their in-use configuring and reconfiguring of breasts points beyond the physical meaning of bras as support objects and towards our messy, complex, and uncertain everyday realities. The varying ways that the bras can be worn are shareable beyond my own bodily experiences, which is extended through pattern making as a way to explore how they might be adaptable by others. The bras are not meant to be one size or one-size-fits-all, but rather a few-sizes-in-one that recognizes similarities and differences across human bodies. In this way, by opening for appropriation, I view the patterns as algorithms in which data about many bodies can be used for many bras.

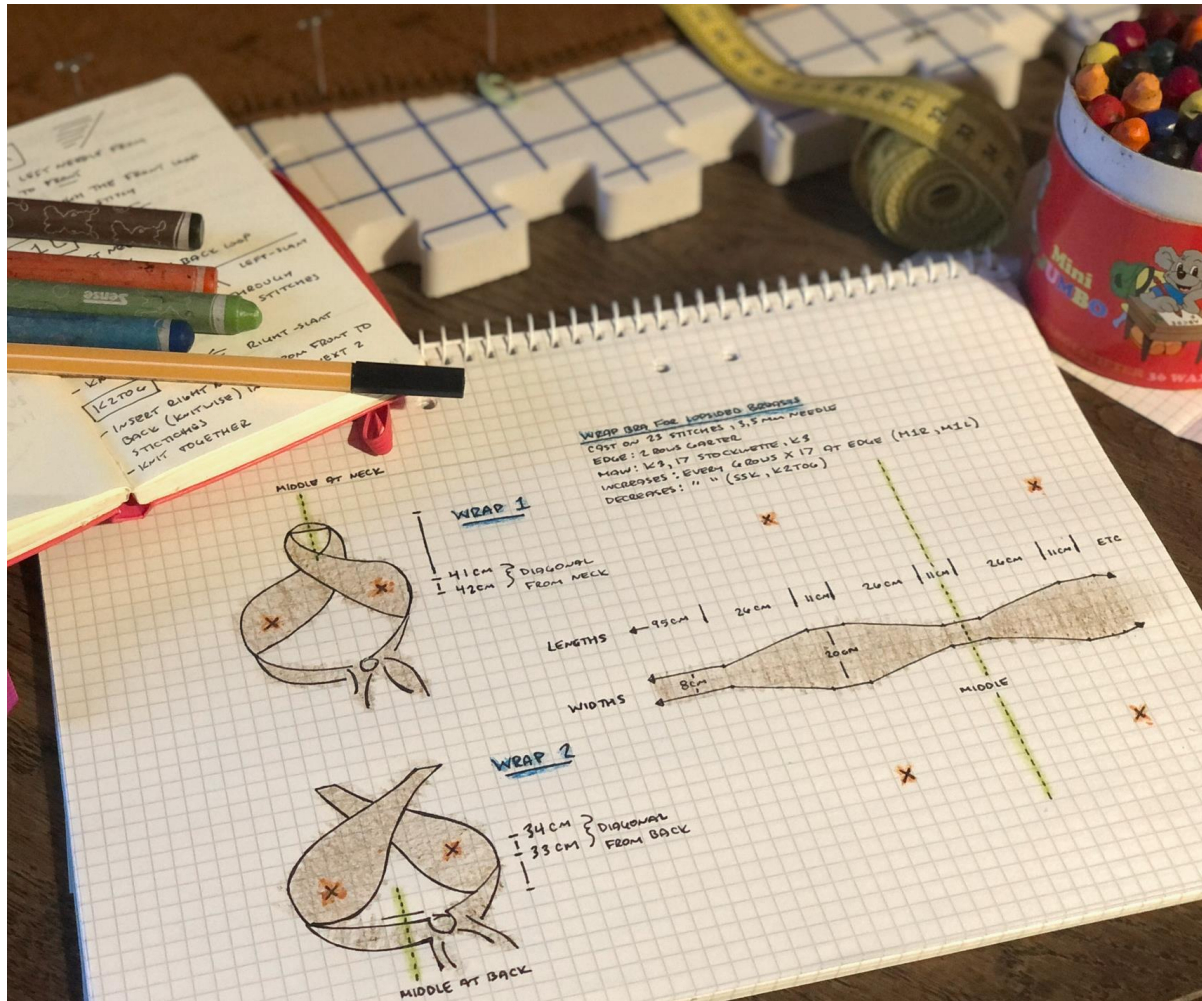


Figure 5 Pattern making and measuring for the wrap bra.

The motivation for this design case illustrates the human body as open and changing through and in response to other bodies, such as my child's needs and desires, and nonhuman agencies, such as hormones and milk. The designs of the bras account for a dynamic filling of space, which includes the fluctuating size of breasts and how their unevenness is not accounted for in market bras. My intimate sharing troubles the physical and political positions of breasts, and is intentionally risky amid the potential of social embarrassment in highlighting a misalignment within normative bodily standards. Yet knitting as a recording of my mothering might further privilege particular histories of breasted bodies such as my own privileged experiences, and a few-sizes-in-one might create new forms of normativity. The bras and their patterns are also generous through the multiplicity of configurations and associate patterns that invite use beyond myself. This opens for a diversity of experiences in the ongoing crafting of bras, which invites unknown experiences of dissonance. This includes how other people might experience bodily fluctuations as practically and conceptually supported, and uncertainty in not knowing how something personal might be appropriated and "tried on" by others.

3.3 Site-writing around breastfeeding

Site-writing around breastfeeding is a poem and narratives that portrays the places where we did and did not breastfeed. Site-writing is a critical spatial practice in which the position of the author is considered in relation to the physical location of the writing itself (Rendell, 2010). This design case is situated in a more-than-human design agenda through its exploration of bodies and places as trans-corporeally entangled (Alaimo, 2010), privileging of particular breastfeeding experiences (Lee, 2018; West & Knight, 2017), and multispecies relations (Cohen & Otomo, 2017; Nimmo, 2010). In response to a felt lack of support and narrow acknowledgement of my partner's role, I was curious towards what was and what else was not supporting us. The poem describes social-spatial relations of particular physical locations, which includes who of us is present and absent. Associated site-writings draw attention to the particulars of each place that support the presence or absence of breastfeeding. The knowledge contributions include the poem and narratives, two reflections on designing with bodily materials as more-than-human, and my methodological process of critical reflection (as reported in Helms, 2021).



Figure 6 Top: poem of social-spatial relations. Bottom: example site-writing from the bathtub. All site-writings available in previous publication (Helms, 2021).

When I began to make sense of the poem and narratives, I did so in relation to the other two design cases previously presented (i.e. transforming milk into fiddling necklaces and knitting bras for lopsided breasts). My methodology encompassed the following steps. I first placed the site-writings on individual pages according to their order in the poem. I then arranged the pages according to their approximate spatial locations as physical places. Next, I went through multiple iterations of moving the pages according to emergent themes as I added photos of the other two. This shuffling spatially and temporally considered the explorations and their content as non-linear. I could move between considering the socio-material particularities of a place, such as the relaxing environment of a bathtub or the political structures that privilege access to affordable preschool, to conceptualizing across situations and artifacts, such as what it means to fill a space as a body among other bodies in a bedroom or as milk in a breast in a bra. From this approach, I understood the self as trans-corporeally (Alaimo, 2010) entangled and always becoming through environmental, technological, and political agencies.

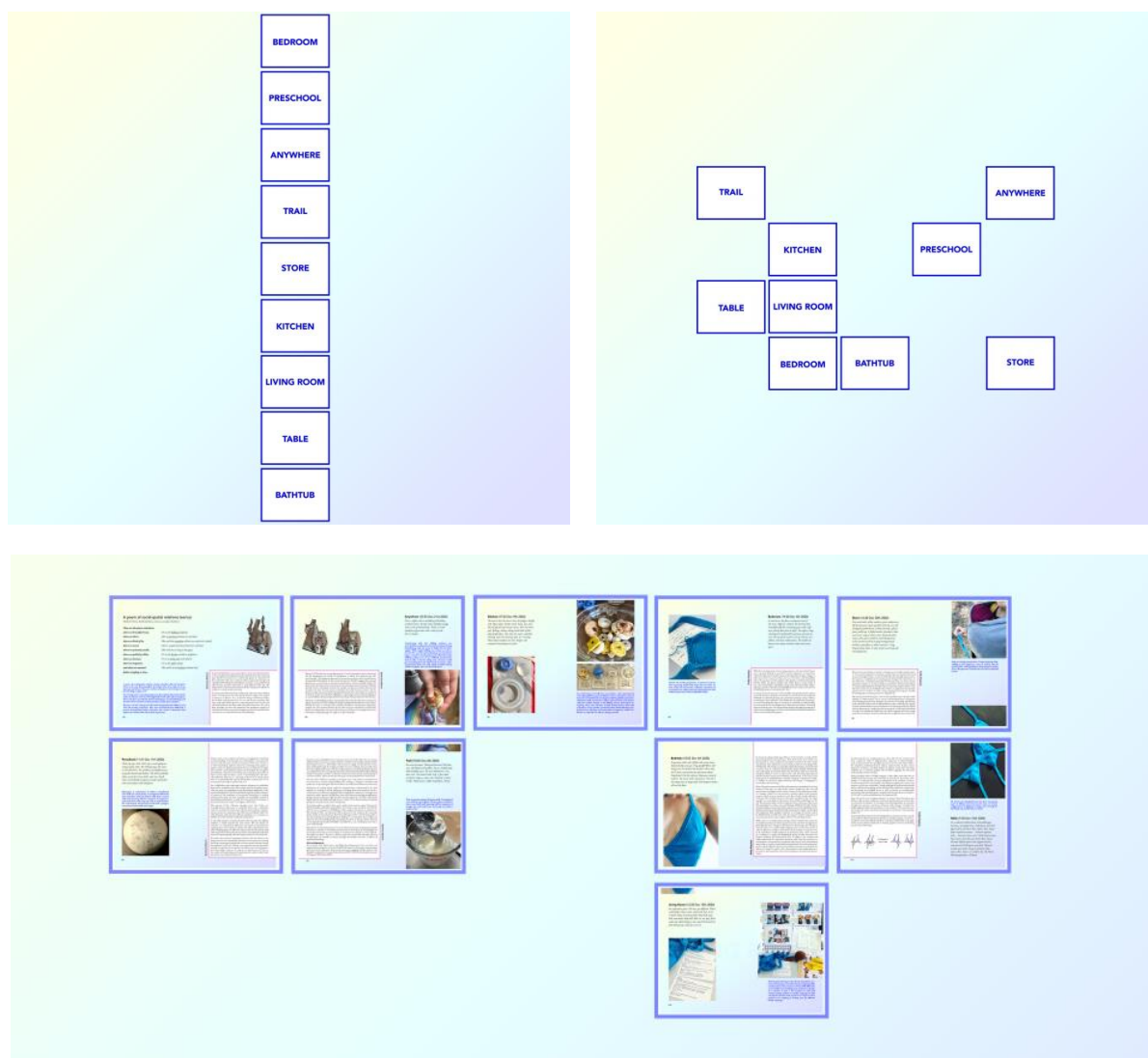


Figure 7 Stills from an animated presentation that illustrate my sense-making process of the site-writings around breastfeeding. The full video is available at <https://youtu.be/-tbK7wDTVPo>.

Mapping and re-mapping pages centered my experiences to explore the social, material, and political relations that contributed to them. The physical mappings of site-writings with the other explorations attends to these complex and messy relations. It pragmatically and conceptually sought misalignment to notice structures that were previously obscured. In previous published work (Helms, 2021), I suggest an arrangement of pages as one possible instantiation of relations, which is suggested for readers to recreate. This is in disregard to a publication format as linear. It invites readers to position themselves in relation to the other two explorations and remake new, situated relations across content. These ongoing mappings acknowledge my reflections as limited to my own experiences and are rhetorical in foregrounding sense-making as knowing through the body. They reinforce possibilities by shifting positions in drawing relations, discovering absence, reimagining presence, and rethinking support between a designer and an audience.

Site-writing around breastfeeding and my process of sense-making was important for thinking with the social, material, and power relationships between bodies and places. This included drawing attention to the formal social support that made my breastfeeding experiences possible and desirable, and historical practices of wet nursing that shape contemporary power relations among humans (McGuire, 2018; West & Knight, 2017) and across species (Otomo, 2014). Exploring presence and absence was initially about what was supporting my experiences, which was reflectively risky through public and professional dissemination. My methodological process as a rhetorical device welcomes additional narratives of breastfeeding, and in doing so is a scaffolding for an audience to find their own way. It views an audience as bodily with histories, presents, and desires that inform their own and others' experiences in making relations and in making sense of relations. This generously highlights knowledge production and community sense-making as ongoing and leaky with meaning found in unfinished dialogue.

4. Discussion

A significant body of work recognizes that design needs to be otherwise amid social injustice, environmental catastrophe, and system inequality. A more-than-human design agenda is an approach that aims to dismantle harmful categories and oppressive hierarchies in recognition of humans as always entangled with nonhuman organisms, beings, objects, and agencies. Generosity suggests a methodological and material openness to change and difference from this agenda. In the following, I first discuss centering oneself as a designer as an intercorporeal questioning of what it means to be human. This methodologically and practically situates generosity in more-than-human design. I then discuss the unmaking of bodily boundaries and personal integrity from this that influences the practical risks a designer might be willing to take. This materially problematizes some more-than-human relations as *more* more-than-human than others.

4.1 An intercorporeal questioning of what it means to be human

Within the design cases presented, generously centering oneself appears at odds with an agenda aimed to reach beyond a human center and to decenter particular humans that have long been foregrounded in design. Inherent to an intercorporeal model of generosity and a posthuman feminist commitment, centering oneself as a designer is rather a starting point in questioning what it means to be human. This includes the particular ways of being human in the world that a designer has experienced and the social and material agencies of fluids, hormones, words, data, and artifacts that blur bodily boundaries and human/nonhuman dichotomies. It is a deliberately centering of the self to “become undone [as] a chance—to be addressed, claimed, bound to what is not me, but also to be moved, to be prompted to act, to address myself elsewhere, and so to vacate the self-sufficient ‘I’ as a kind of possession” (Butler, 2006, p136). Centering is a situated perspective that is grounded in our human capacity to respond (Kimmerer, 2020), and to open for a more responsible making and unmaking of relations. This is increasingly demonstrated through a diversity of first-person approaches that attend to and makes space for others and otherness, such as bird-watching (Biggs et al., 2021), weaving (Oogjes & Wakkary, 2022), composting (Bell et al., 2022), menstruation (Campo Woytuk & Søndergaard, 2022), breathing (Tsaknaki, 2021), and earthquake narratives (Núñez-Pacheco & Frid, 2023). Thus, generosity in more-than-human design is a radical act of noticing and attending to the subjectivities of becoming and mattering as a person that includes grappling with discomforts and uncertainties in designing differently. More specifically, its focus on embodiment and corporeality blurs designerly subjectivities with human objectivities of becoming and mattering, such as the agential capacities of milk that reconfigure bodily composition and human experience while doing design and navigating dissonance.

The three design cases presented are all grounded in a particular set of autobiographical experiences, yet an intercorporeal model of generosity is practically engaged with in different ways. For example, this includes the bodily gifting of milk, the social sharing of experiences, the inviting of pattern appropriations, and collaborative sense-making across design cases. It also includes how an opening of oneself includes risks beyond intentional humility to the bodies of other humans and species through entangled, material relations such as the traveling of toxins and commodification of milks. This emphasizes generosity as not only a value or ethical stance, but also a practical doing in which caring for more-than-human relations also necessitates a recognition of ongoing agencies and entangled tensions. It foregrounds the reconfiguring of design intentionality amid a receptiveness to what subjectively comes to matter, affectively and materially.

4.2 Personal risks of material boundaries and bodily integrity

As demonstrated through the three design cases’ focus on the human bodily process of breastfeeding, practically engaging with the risks of generosity also problematizes some more-than-human relations as *more* more-than-human than others. They highlight liveliness of milk as a biological material and as a design intervention: it could not be separated from

its bodily origins, intentions, and environmental and political relations. My desire to avoid affecting our milk supply and relational recognition of this inevitability blurs boundaries between the making of and the making with milk. My prioritization of human milk over cow's milk and initial lack of consideration for compositional differences foregrounds multispecies entanglements through food consumption and commodification. Together, these contribute to how I uncomfortably situate and understand myself as human, while knowing that "we have never been purely human in the first place" (Åsberg, 2013) as the body is always more-than-human (Homewood et al., 2021).

Yet within a remaking of what it means to be human and alongside a recognition of nonhuman technological and environmental agencies, how do designers generously grapple with an unmaking of bodily boundaries that influence the risks that one might be willing to take in practical design work? How does the inclusion of "living" materials inform generosity in more-than-human design, and in particular, biological materials that a designer considers their own or integral to bodily integrity? In exploring their skin microbiome, Bell et al. (2023) note that they "were more emotionally invested in our wild microbiome cultures as they felt incredibly intimate. They were derived from us, they were a part of us." In reflecting upon drawing with bodily fluids, Yurman (2022) similarly questions if and when materials should be regarded as human or nonhuman in relation to bodily origins. These questions are further situated within broader aims to understand the nature of design materials that might not be biological but are also conceptually understood as fluid, dynamic, and changing (Redström & Wiltse, 2018), and which are increasingly entangled in human well-being and livelihood (Forlano, 2017a). In returning to Diprose, accounting for the corporeal dimension of generosity that is pre-reflective while maintaining an open disposition towards its asymmetrical effects and affects, is a possibility for more-than-human design in tackling tensions of material difference and bodily otherness for more sustainable and just futures.

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