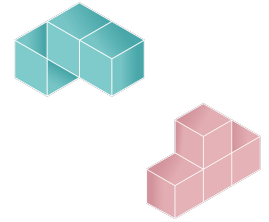


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# SCALING BODILY FLUIDS FOR UTOPIAN FABULATIONS

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## ABSTRACT

This paper explores human bodily fluids for more-than-human *collaborative survival*. We present four utopian fabulations in which urine, menstrual blood, and human milk are designed with beyond the scale of a singular human body. Each fabulation illustrates *queer scales* and *uses* of bodily fluids through extended or improper uses as pathways towards caring multi-species relations within a damaged environment. From these narratives, we reflect on *imagining generous collaborations* for an openness towards unknowable possibilities and *crafting different measures* through the tensions of coinciding scales.

## INTRODUCTION

Bodily fluids are essential to anthropocentric flourishing through their distribution of nutrients, filtering of toxins, and sustenance of reproduction. Yet a lens of usefulness often remains at the scale of a body - a human body - which can be misleading as bodily fluids mix and mingle at microscopic and macroscopic scales before, during, and after when they might be considered used by or useful to humans.

Bacteria from a child's saliva are shared with a mother during breastfeeding, which informs the composition of subsequent milk and microbiome colonization (Hird, 2007). As urine is directly and indirectly pooled into

much bigger bodies - bodies of groundwater, salt water, and drinking water - hormones might find themselves in someone or something else (Haraway, 2012), and nitrogen and phosphorus can have drastic effects on the growth of nonhuman ecologies (Cordell et al., 2009). Menstrual blood, as a combination of blood and endometrial tissue from the uterus, is rich in nutrients and stem cells that can sustain and generate existing and new lives across species (Allickson et al., 2011). Thus, it is clear that the "bodily" of bodily fluids could more generously extend to the entanglement of a diversity of bodily beings and meanings beyond the scale and notion of a singular human body.

We build upon this research to further investigate what it might mean to design with bodily fluids at *queer scales* and *uses*. By playfully zooming in and out to understand what bodily fluids compositionally are and might materially do, the coinciding scales and "wrong" uses might be disorienting, or *queer* (Ahmed, 2019).

In the following, we present four utopian fabulations within which particular human bodily fluids are reimagined at queer scales and uses for more-than-human *collaborative survival* (Tsing, 2017). We draw upon design pathways towards caring multi-species relations within a damaged environment (Liu et al., 2018); as well as related feminist technoscience research that attends to noticing and fostering kinship of human life as entangled in more-than-human worlds (Haraway, 2016). From our fabulating, we present two reflections: *imagining generous collaborations* and *crafting different measures*. The first reflects upon challenges of imagining more-than-human collaborations beyond known entanglements. It points to an openness, or generosity, towards unknowable possibilities in the form of lingering questions. The second reflects upon crafting narratives with coinciding micro and macro scales. It points to tensions in scales as

resources for different ways of valuing, or “measuring”, bodily fluids as usable and useful.

#### FOUR UTOPIAN FABULATIONS

Our design process began with the motivation to reimagine human bodily fluids as valuable and abundant resources for more-than-human utopias. In this way, we sought to *queer* (Giffney & Hird, 2016) bodily fluids by challenging stigma and normative associations of them as unusable byproducts or waste, and doing so, to imagine *queer uses* (Ahmed, 2019) in their deviation from human-centered biological “uses”.

With the aim of creating a collection of visual narratives, our process followed three steps. First, each author collected aesthetic inspiration from related academic or artistic projects, and individually created five visual explorations that communicated back to our conceptual starting point. The latter included sketches, water-colors, and collages that used photographs from gathered inspiration and our own previous experiences of caring for, researching, and designing with menstrual blood, urine, and human milk (Campo Woytuk et al., 2020; Helms, 2019; Helms, 2021; Søndergaard et al., 2020; Søndergaard & Hansen, 2016; Tsaknaki et al., 2021). On a shared wall, we pinned up this material to discuss and annotate with post-it notes how bodily fluids might conceptually scale beyond the notion of a human body. We brought forth encounters with containment, concealment, and scarcity that we wanted to problematize; and encounters with rituals, knowledge, and nourishment that we wanted to extend.

For a second step, we formulated four main themes from which we each developed one or two singular images that alone could suggest a rich narrative. During two additional in-person meetings we printed, pinned-up, discussed, and annotated images for revision. We documented our process through photos and written notes. In a third step, the notes were revisited for the writing of the accompanying textual narratives that were collaboratively reviewed by all authors.

The resulting visual and textual narratives are not intended as futures to strive for or against, but instead as fables to think with for the present (Haraway, 2016). In this way, they could be situated in a future, or a parallel now; and regardless of their temporality, they are shaped by feminist utopian commitments (Bardzell, 2018) towards other ways of designing and radically being in the world as and with more-than-human bodies (Jönsson et al., 2019; Lilja, 2019).

We present the four utopian fabulations in an order corresponding to how we think they shift in scale from a singular human body to other bodily ways of collaboratively surviving, but we also welcome other orderings for ongoing interpretations of them as individual and collective fabulations.



Figure 1: Magical Discharge Rituals visual narrative.

#### MAGICAL DISCHARGE RITUALS: SPIRITUAL BLEEDING AND CAREFUL WITCHCRAFT

Human and canine menstruators commune in a garden whereby locally grown herbs are used to brew tea particular to a menstrual cycle. In this ritual of care (Schalk & Brolund de Carvalho, 2019), participants begin their human-food interaction (Dolejšová et al., 2020) by contributing biodata from a vessel of menstrual blood, a basal thermometer, or a petri dish of saliva. Tools of collection are provided or brought as part of an ecology of menstrual experiences that accommodates and encourages “touching” (Campo Woytuk et al., 2020). Biodata can be publicly gathered at the table, or privately prepared in advance and then brought. From the biodata, a lunar analyzer draws upon the current phase of the moon to interpret menstrual cycle desires for the personalized crafting of tea.

Once brewed, the ceremony host relinquishes each herbal concoction to the gathering via a moving band that traverses the table. Although a particular brew is intended for a particular menstruator, as the fluids travel within the collaborative space, tea for others might be observed, shared, mixed, swapped, or gifted out of curiosity and generosity.

Individual rituals mingle with collective rituals. Human rituals mingle with animal rituals. Earthly rituals mingle with interstellar rituals.

In this magical discharge ritual, there are no shadows, and without shadows movement is indistinct and directionless. This ceremony has no beginning or ending, and instead has many beginnings and endings like the moving band that offers ongoing opportunities for shared rituals.

What are the bodily fluids? Those that are collected or those that are concocted? And what bodies do these bodily fluids belong to? Those that touch or those that are touched?



Figure 2: Community Menstruation Practices visual narrative.

#### COMMUNITY MENSTRUATION PRACTICES: MATERIAL HARVESTING WITH CIRCULAR ORIGINS

A community gathers moss as absorbent material to make menstrual underwear ecologies. This *vibrant wearable* (Tsaknaki et al., 2021) is bound together with rope and tubing that allows for blood to travel over, around, and against human skin. The bindings are lively veins that nourish the moss. Following a menstruation period of bodily change (Søndergaard et al., 2020) - such as menarche, a monthly cycle, menopause, or a lack of menstruation due to pregnancy or contraception - the moss is given back to the forest and ritually hung as *kokedama* - ornamental balls of soil covered with moss - for new and continued flourishings. These cycles are ritualistically repeated as reciprocal acts of care between human communities and local ecologies (Kimmerer, 2003).

This community menstruation practice is intergenerational whereby a non-menstruating parent and a future menstruator might gather moss for a menstruating parent; or a non-menstruator might wear moss for a hopeful menstruation; or a former menstruator might hang moss for a future menstruator. Like humans, forests are also intergenerational.

This practice is for learning about cycles through harvesting and cultivating, wearing and adorning, acknowledging and appreciating. Like forests, humans also learn.

Bodies move. Seasons change. Fluids move. Bodies change. The forest is never still, and bodily cycles are simultaneously fast and slow, predictable and erratic, in sync and at odds.

What are the bodily origins of materials? What are the materials origins of bodies? Does moss only grow where blood flows? Does blood only flow where moss grows?



Figure 3: Bodily Fluid Infrastructures visual narrative.

#### BODILY FLUID INFRASTRUCTURES: VISIBLE TUBES FOR TRAVELING NOURISHMENT

Exposed industrial pipes ebb and flow along a block of modular housing. They pulse in red, yellow, and cream as menstrual blood, urine, and human milk are transported within and from different domestic containers. The colors of the moving fluids are also in motion as they shift in hue, saturation, and opacity as a dynamic palette of pipes. From this deliberate exposure, change and variation are visible and noticeable (Helms, 2019; Helms, 2021; Søndergaard & Hansen, 2016; Tsaknaki et al., 2021).

In one scene, a menstrual cup is emptied. The blood and menses are diluted with water for plant nourishment inside another home while also floating upwards to fertilize a community rooftop garden. In another scene, a catheter of urine freely couples with the structural tubing, which distributes the effervescent liquid to sustain vertical gardens and cleanse clothes in a washing machine. Human milk is generously collected in another scene to carefully nurture a kitten and lavishly refresh a man.

These scenes are mundane yet spectacular. These scenes are glimpses of bodily ways of knowing and maintaining the commons.

The infrastructure continues. Fluids wander further, much further, beyond these bodies of housing and into bodies of land, bodies of water, and bodies of thought.

They are resources for plants, animals, and humans. They are provocations for plants, animals, and humans.

Where else do bodily fluids travel? What other scenes are out of sight? What other scenes are ways of knowing? What else does this fluid infrastructure challenge and maintain? What else challenges and maintains this fluid infrastructure?





Figure 4: Spilled Breast Milk visual narrative.

#### SPILLED BREAST MILK: SITUATED FLOURISHINGS AMONG UNCONTAINED ABUNDANCE

A tanker of human breast milk travels across an ocean. It flies a flag for universal breastfeeding and no-breastfeeding (Jardine, n.d.) as this abundance of milk is diverse in origin and intent. Its destination is unclear, yet its orientation is obvious. In the wake of a fierce storm amid arid landscapes and melting icebergs, lightning strikes the nomadic milk bank. From the resulting spill, marine life and lush gardens flourish. Paradise is not a white beach, but instead a diverse mess of situated growth. Endangered and non-endangered species thrive in unexpected dimensions and configurations.

The ocean swells forward and backward in a circular motion. Fluids leak, nutrients drift, bodies mingle, boundaries blur (Helms, 2021; Tsaknaki et al., 2021). It is unclear what bodies are fluids, and what fluids are bodies.

There are conflicting narratives in this interspecies worlding (Deloughrey, 2015):

Spilled breast milk is catastrophic if interpreted as lost labor and unrequited love. In this way, it is an apocalyptic narrative in which milk represents human exceptionalism.

Spilled breast milk is generous if interpreted as ongoing labor and open love. In this way, it is an ordinary narrative in which milk represents human accountability.

The lightning is exceptional and accountable. The spilled milk is accidental and intentional.

How are bodily fluids responsive and responsible? Through a yielding to bodily change? Or through a permeation of bodily boundaries? How are fluids bounded in collaboration? And how do bodies change in surviving?

## REFLECTIONS

### IMAGINING GENEROUS COLLABORATIONS

During our design process, we often discussed the unfolding visual fabulations as a series of dependent or interconnected events. For example, this can be seen in the gathering of bio-data in order to craft personalized tea in *Magical Discharge Rituals* (Figure 1), or in the specific scenes in which fluids were collected and then distributed in *Bodily Fluid Infrastructures* (Figure 3). This form of worlding helped us situate particular collaborations and species survival from proposed queer uses, yet it also limited our imagining to known and “closed” more-than-human encounters.

In reflecting upon this, within the written narratives we aimed to cultivate more *generous* (Diprose, 2012) collaborations through an openness towards unknowable possibilities in the form of lingering and unresolved questions. For example, in *Community Menstruation Practices* (Figure 2) we sought to challenge a visual linearity evidenced in the sequential harvesting, wearing, and hanging of moss underwear by revisiting notions of material origins; and in *Spilled Breast Milk* (Figure 4) we sought to similarly reopen a linear progression of environmental conditions by questioning depictions of response-ability amid change.

### CRAFTING DIFFERENT MEASURES

We see our hopeful imagining towards generous collaborations as inseparable from designing with bodily fluids at conflicting scales that might be disorienting, or *queer*. An openness towards fluid interpretations of “bodies” at micro and macro formations contributed to thinking beyond a singular human body. For example, forests as intergenerational in *Community Menstruation Practices* (Figure 2) frames new possibilities for interspecies communities despite possible strange and conflicting temporalities of bodily cycles; and the exposed pipes in *Bodily Fluid Infrastructures* (Figure 3) imply oddly immense quantities of bodily fluids from trivial modes of collection to be capable of traveling and nourishing.

In this way, crafting queer scales is not only an absurd scaling up, but also the tensions between coinciding scales of zooming in and out that crafts new modes of “measuring” bodily fluids in more-than-human worlds. For example, in *Magical Discharge Rituals* (Figure 1) the lunar analyzer calculates menstruation desires according to planetary orbits; and in *Spilled Breast Milk* (Figure 4) an everyday bottle might just be absurdly large or the milk inside absurdly more powerful than previously considered. We speculate that the tensions themselves might also be put to queer uses for the further crafting of more-than-human utopian fabulations.

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