

# Aqueous Logics: towards a hydrofeminism approach to sustainability

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In the popular imagination, sustainability is often synonymous with environmentalism, but it encapsulates much more. While environmentalism and conservation are often a focal point of sustainability efforts, so too are the people who impact the environment through their actions and associated activism. In this paper, we examine the discourse on sustainability, nature conservation and climate change. We focus, in particular, on the relationship between communities and the seas, where three main topics entangle: eco-feminism, ocean conservation and well-being. This paper highlights its implications for research on sustainability, nature conservation and climate change by outlining an aqueous logic — a fluid way of seeing the world that is oriented toward mutual care and embodiment.

**Keywords:** *hydrofeminism; sustainability; ecofeminism*

## 1 Introduction

In this paper, we draw on concepts from activism, ecofeminism, and well-being to respond to the uncertainties created by the Anthropocene by proposing a fluid, non-linear, but nevertheless hopeful approach to Sustainable Design Research and practices. We call this stance Aqueous Logic, a liquid imaginary, which comes to be through a deep and respectful connection between humans and more-than-humans through water and water bodies. Building on hydrocommons and post-human feminism, Aqueous Logic proposes to look at embodiment and women's bodies as examples of fluid, leaking, and sensitive places from which we are and experience the world. Inherently hopeful, Aqueous Logic embraces the complex, non-linear nature of socio-technical interventions while allowing a more open and wide-ranging set of design stories to form. We will examine aqueous logic through the lens of media artefacts from photography and documentary film to interactive games. In particular, we will illustrate the process of Flow, a project that takes the shape of a documentary and photography book, illustrating the stories of several women and their relationship with the sea in the city of Brighton, UK.



Sustainability is broadly defined as enabling viable futures, including the many conditions humanity and the biosphere need to support future generations (environment, public health, social equality, and justice) (Abbass et al., 2022; Chopra et al., 2022; Ferreira et al., 2021; Light et al., 2017). Inspired by ecofeminism (Deane-Drummond, 2007; Eaton & Lorentzen, 2003; Kannabiran, 2014), recent critical scholarship has highlighted the need for a more comprehensive approach to sustainability that considers socio-cultural and political aspects — seeking to understand the values, assumptions, and ethical considerations that shape design sustainability goals and commitments (Hansson et al., 2021; Scuri et al., 2022). Furthermore, as the pressure of the climate crisis increases (Ferreira et al., 2021; Light et al., 2017), others argue for a broader definition of sustainability that considers the multi-dimensional concept of well-being (Page-Reeves, 2019). This includes not only physical, psychological, social and environmental aspects of well-being but also broader perspectives on sustainability as a way of promoting more meaningful and fulfilling lives (Clear et al., 2015). Examples include interventions enabling less polluted and more inclusive public spaces or promoting accessible transportation (e.g., walking and cycling). Such shifts can lead to healthier lifestyles, reducing stress and promoting sustainable everyday practices (reducing waste, using renewable resources, and supporting local businesses) that counter overconsumption and materialistic values associated with lower levels of well-being (Dall’O’, 2020; Fieuw et al., 2022; Foth & Caldwell, 2018).

Creating resilient communities that can adapt to the challenges of environmental and social changes (Chamberlin & Hopkins, 2009) is central to the aim of transition activism. For example, in 2021, Mexico City Mayor Claudia Sheinbaum announced the replacement of a prominent statue of explorer Christopher Columbus with that of an indigenous woman. She was careful to note that the purpose was not to erase history but to deliver social justice in honouring the role of women in Mexico. Columbus’ statue was seen as a symbol of colonialism and oppression that led to the marginalization of indigenous people (Mexico City Swapping Columbus Statue with One of Indigenous Woman, 2021). Sheinbaum’s move to replace the statue reflects an acknowledgement of the consequences of colonialism and the oppression of indigenous populations, their practices, and how their relationship with nature and the environment was also marginalized, and suppressed by Western supremacist cultures.

Acknowledging a post-human post-anthropocentric sense of well-being, we cannot separate social justice from environmental justice. Pepper’s analysis of “ecotopianism,” or the pursuit of an ecologically ideal state, and its inherent tensions provide a useful framework for understanding how technological interventions can align with environmental activism (Pepper, 2007). Dourish, for example, argues for adopting scale issues as a point of departure for design to take environmental activism’s political, cultural, institutional, and spatial aspects seriously (Dourish, 2010). Similar examples can be found in HCI, design, and computing in general. For instance, computing researchers argue that the rapid development of artificial intelligence is not only costly in terms of hardware and cloud computing time, but also because of the non-renewable energy necessary to fuel its progress (Strubell et al., 2020) and a disregard for development goals and ethics (Bender et al., 2021). Alongside scholarship that highlights these issues, we also see work to foster social and environmental justice through the development of more environmentally friendly materials, energy-efficient systems, and strategies that promote resource conservation.

In the sections that follow, we lay the grounds for discussing new ways to tackle nature conservation positively impacting climate change. We trace a path through a set of definitions and examples of several theoretical concepts, necessary for rooting and evolving this discourse.

## **2 Towards a hydrofeminism approach to sustainability**

Hydrofeminism, as an innovative interdisciplinary field, bridges the gap between feminist theory, posthumanism, and the study of water within a fluid relational context, while also forging strong connections with environmental humanities. Steve Mentz argues that living in watery environments requires altering our views, replacing carbon-heavy masculine narratives of control with “less epic, more improvisational stories” (Mentz et al., 2009). The environmental humanities provide critical frameworks that help explore the complex human-nature interactions, which are paramount in hydrofeminism's quest to address intersectional inequalities in water governance and access. Mattson and Gordon analyse the 1995 cli-fi film *Waterworld*, in which “queer elemental bodies collaborate with ecology and embrace their inherent impurities,” while imagining a world in which communities flourish in a post-climate change watery world (Mattson & Gordon, 2022).

This paper draws on these ideas with a theoretical mindset. This work doesn't want to interpret design as a solution-seeking discipline, nor it wants to draw biomimicry solutions. It does not want to be an emulation of watery behaviours, but a theoretical understanding of what it means to reappropriate the animal qualities that define us as humans, considering communities' precarious future relationships with water. This work is also not proposing a methodology of aqueous logic. Its aim is to challenge the design discipline as problem-focused, proposing the idea that new methodologies can exist within these fluid and uncertain times. Next, we articulate how hydrofeminism is situated in the context of feminist studies and posthumanism perspectives.

### **2.1 Blurring divisions between nature and culture**

In her *Cyborg Manifesto*, Haraway critiques traditional feminist approaches centred on identity politics and advocates for coalition through affinity. She employs the cyborg figure to inspire feminists to transcend the constraints of conventional gender norms and politics. The "Manifesto" is a significant milestone in feminist posthumanist theory development (Haraway, 1991). The cyborg concept represents a rejection of strict boundaries, particularly those distinguishing "human" from "animal" and "human" from "machine," and values the blurring of these categorical borders. The division between culture and nature is no longer relevant, giving rise to the cyborg by merging this boundary. In “*Staying with The Trouble*”, Donna Haraway discusses how the topic of reproduction is important in a feminist discourse connected to environmentalism. She states the importance of giving women power over their reproductive rights, and she asks: “What is decolonial feminist reproductive freedom in a dangerously troubled multispecies world?” (Haraway, 2016). Against this, things don't seem too promising when countries like the US, that position themselves to be one of the most democratic societies, strip women of reproductive freedom, as happened recently in Texas' anti-abortion laws.

As Bardzell argues, feminism naturally aligns with interaction design through a dedication to matters of agency, fulfilment, identity, equity, empowerment, and social justice (Bardzell, 2010). Feminist perspectives enable researchers to explore more nuanced approaches to ethics, positionality, and situatedness (Eaton & Lorentzen, 2003). The third wave of feminism in the early 1990s saw the emergence of new feminist directions and theories, such as intersectionality, ecofeminism,

transfeminism, and postmodern feminism (Evans, 2015). As the fourth wave of HCI takes the stage, the discourse around the body is changing from user to body, body to bodies, and bodies to more-than-human bodies (Frauenberger, 2020; Homewood et al., 2021). Building on the vast and evolving HCI literature focusing on embodiment (Ayobi et al., 2016; Nunes et al., 2015), bodies are conceptualised as performative, sensing, data-fed, intersectional and more-than-human (Ståhl et al., 2022; The Oslo School of Architecture and Design & Juul Søndergaard, 2022).

## **2.2 Hydrofeminism from bodies to bodies of water**

Throughout history, there has been a significant connection between female bodies and bodies of water, often subjected to mistreatment and misrepresentation. In Greek mythology and other cultures worldwide, sirens are portrayed as malicious feminine beings who lure and distract men from their essential duties, leading to sin and devastation (Shahbazi et al., 2014). The media, heavily influenced by patriarchal systems, has distorted female bodies by idealising, sexualising, and altering them to fulfil unrealistic expectations (Cappuccini, 2016).

Neimanis explores the relationship between water embodiment and female bodies in her book, *Bodies of Water*, introducing the concept of hydrofeminism, a unique perspective on the connection between female bodies and water. She asserts that "as women with leaky bodies, we are constantly reminded of the amniotic fluid where we come from, which is often forgotten by men in the feminist discourse" (Neimanis, 2012), emphasising the parallel between the female body and the sea, as both serve as nurturers of life. While this perspective might appear poetic, it also carries certain complications, which Neimanis acknowledges. This refers to the very concept of leaky bodies as directly relating feminine bodies to their reproductive capabilities and not considering female identity as solely and closely related to it, as a patriarchal discourse might argue.

In contemporary times, it is necessary to move away from the notion of women's bodies solely tied to gestation and procreation, as this perspective remains rooted in a patriarchal view (Haraway, 1991). Women's bodies encompass much more than reproductive capabilities and deserve to be liberated from the constraints of idealised reproductive instincts. Recognising the complex relationship between women's bodies and bodies of water allows for a deeper understanding of their experiences and connection to the natural world.

## **2.3 Hydrocommons: an alternative imaginary**

Neimanis describes this idea that the water in our bodies is part of the hydrosphere, as there's an exchange of water from our bodies to the atmosphere around us: in through drinking and breathing, out from the skin and excretion, for example. We "take in" water and then return it to a cycle she calls hydrocommons. To a certain extent, the water in our bodies isn't "ours", it belongs to other bodies too, human and other-than-human (Neimanis, 2009). "In some ways, the Anthropocene forces us to consider how differences as bodies are crucial to any kind of planetary future, yet simultaneously to reflect on our commonality as planetary species." (Neimanis, 2017). Neimanis views become particularly relevant in the Anthropocene, offering bodies of water as an alternative image to the dominant one in this era and renaming it "Aqueous Anthropocene" (Neimanis, 2017). In this way, Neimanis illuminates the way from Anthropocene to the Ecocene, recognising there's a need to transition to it, transforming thoughts of differences towards a less individualistic view of commons.

## 2.4 Care and restoration in post-anthropocenic thinking

While a transition from Anthropocene to Ecocene is an auspicious one, what are the implications of this transition? As Post humanist and post-anthropocentric research in Design and HCI further commit to working with more-than-humans, practitioners are left with many open questions and uncertainties about how to engage with more-than-humans in their thinking and working productively. A less individualistic way of thinking implies a logic based on care and restoration rather than extraction, promoting regeneration rather than decimation (Key et al., 2022).

Tronto and Fisher defined care as the activities "we do to maintain, continue, and repair [...] our bodies, ourselves, and our environment" which they further structured as a four-stage model of care: i) caring about (identifying a need), ii) caring for (taking responsibility to attend to a need), iii) care-giving (the actual work), and iv) care-receiving (the response of what has been cared for). These four stages are framed around four moral dimensions to assess care: i) attentiveness, ii) responsibility, iii) competence, and iv) responsiveness. Infusing values of democracy (justice, freedom, and equality), adds solidarity and trust as moral dimensions through caring with (Tronto & Fisher, 1990).

Recently, the concept of Care (Groot et al., 2019; Mattern, 2018; Tironi & Rodríguez-Giralt, 2017) has been used as a design guiding principle because of its inclusive qualities and a lens for research and analysis (Krüger et al., 2021). Croon proposes thinking with care in design and HCI should draw attention to alternative ways of knowledge production through a focus on feminist theory and designerly thoughts (Croon, 2022), such as Barad's agential realism, diffractive methodology (Barad, 2007) and Haraway's speculative thinking (Haraway, 2016). In contemporary feminist theory, diffraction is often employed figuratively to denote a more critical and difference-attentive mode of consciousness and thought (Geerts & Van Der Tuin, 2021). Building on Haraway, Barad argues for practising diffraction as a method that attends to the differences in phenomena. To attempt diffractive readings, it is useful to not focus on categories but on the processes of othering through material intra-actions (Frauenberger, 2020).

The intersection of care ethics and posthumanism highlight challenges and tensions in post-humanist and post-anthropogenic research engaging with the environment and the more-than-human. Key et al. urge designers and practitioners to take up new ways of imagining through entangled, messy methods, which contribute to a feminist unsettling of design and HCI methodological commitments, practices, and praxis. Similarly, Solden et al. invite HCI researchers and designers to embrace uncertainty as a characteristic and central challenge of contemporary life and to engage with uncertainty as a generative feature in design, as opposed to a force to mitigate and control (Solden et al., 2020). An expression of this could be seen in Lopes et al. work of engineering a smartwatch that includes a slime mould which users have to feed to power the device (Lu & Lopes, 2022). Another example is brought to life by Frankjaer et al., who describe a research-through-design process that is interdependent, where ideas arise through a dialogue between the researchers' practice and the materials themselves (Frankjaer & Dalsgaard, 2020). These processes would have been hard to obtain without a logic of uncertainty, where researchers stay open to a range of possibilities rather than an approach that seeks to narrow in quickly on a solution (Akama et al., 2018).

### **3 Aqueous Logic - Promoting hope, through uncertainty**

From hydrocommons and fluid logic, post-human feminism connects to a liquid and aqueous imaginary, which comes to be through a deep and respectful connection between humans and more-than-humans through water and water bodies. As gender studies scholar Neimanis describes, “ecofeminism encourages us to recognise the connections between the derogation of certain kinds of human bodies, and the mistreatment of environmental bodies, including other animals. Queer feminisms have asked us to pay attention to those bodies - both human and more-than-human - which challenge teleological norms and straight stories of proliferation” (Neimanis, 2017, p.8). In striving to promote more-than-human fluid connections and nature conservation through water bodies, we use the metaphor of an Aqueous Logic. Aqueous Logic proposes to look at embodiment and women’s bodies as examples of fluid, leaking, and sensitive places from which to experience the world. It calls for careful modes of sensing— both resilient and creative, which draw on strength and experimentation to bring about new ways of making sense of and being within the world. We advocate for a sense of care and engagement with the other, through watery connections.

In addition to its fluid qualities, Aqueous Logic embraces a positive attitude towards the future. It proposes a version of hope that is situated in the ordinary and collective practices that influence and make up the future. This kind of hope does not rely on manipulative forms of promise or speculation (Berlant, 2011; Halpern, 2017); it does not rely on external forces (whether God, fate, or technology), but rather invests in a continued and sustained ‘staying with the trouble’ (Haraway, 2016) by fallible and uncertain actors. The goal of Aqueous Logic is to propose a logic that recognises the non-predictive and non-linear nature of socio-technical intervention while allowing a more open and wide-ranging (Aqueous) set of design stories to form. This practice may help to recover some lost forms of agency and open-mindedness that linear engineering practices can often overlook.

#### **3.1 Aqueous Logic and thinking in action**

One example of the aqueous logic metaphor is the recently proposed “Bauhaus of the Seas”, one of the New European Bauhaus (NEB) lighthouse projects which aim to promote a renewed ethical, economic, cultural, spatial and aesthetic regenerative movement from a widely diverse range of dimensions of our relationship with the water bodies (Bauhaus of the Seas Manifesto, 2021). In response to the call for a new movement towards implementing the Green Deal based on sustainability, social inclusion, and beauty (Schellnhuber et al., 2022). Unlike many other approaches to the NEB, based on rebuilding, renaturing, replanning and repurposing, the authors of the Bauhaus of the Seas proposed to recognize the diverse range of know-how already present in coastal and marine communities and ecosystems to generate concrete pathways for action grounded on a critical understanding of the complexities of the seas as a territory of research and practice. The Bauhaus of the Seas calls for Reconciling with the seas by connecting with the waters as a territory of trans-geographic continuity through site-specific ecosystems and entanglements of humans and non-humans, opening new possibilities to the strategic needs of the NEB. They embrace the notion of care by urging communities to co-create fresh ideas, emerging from the interdependence between species, generations and culture and oriented towards care, mutual admiration and respect capable of nourishing an eco-centric narrative “both cosmopolitan and rooted in nature-based solutions, plural, and testimonial, proposing to apply a design approach to complex socio-technical-ecological and more-than-anthropocentric problems” (Bauhaus of the Seas Manifesto, 2021).

This vision was highlighted by Manzini during the Bauhaus of the Seas conference in Lisbon, advocating for the importance of the oceans, as bodies of water that need to be seen, embraced and respected for what they are – and not for what they can give to us (humans). Manzini sees Earth as a living organism that needs a practice of care, embracing its complexities (Bauhaus of the Seas NEB, 2021). What can apparently support our human transition to a more sustainable living, can easily be damaging at the planet level. In terms of design, this also shifts the perspectives - rather than a practice based on fixing and solving, an Aqueous Logic advocates for a practice based on care, acceptance, and adaptability. If we care, in the way Tronto and Puig de la Bellacasa advocate for (Puig de la Bellacasa, 2012, 2017; Tronto & Fisher, 1990), the entangled reality of the world around us will respond and react accordingly.

Aqueous Logic also manifests in “Our Broken Planet” curated exhibition at the Natural History Museum in London, which displays a polymetallic nodule, found in large numbers in the ocean’s bed. Rich in manganese, nickel, cobalt and copper, they are very appealing for the renewable energy industry, as they are materials used for electric cars, solar panels and wind turbines, to name a few. The deep seabed mining argument is that it can accelerate the transition towards renewables. However, the impact it might have on the ecosystems could be far more catastrophic (McKie, 2021). Another example of Aqueous logic in action is Thea Taylor’s description of the Sussex Dolphin Project at the Shoreham Sustainability Week in the UK. In this event, Taylor described Help Our Kelp, a new kelp restoration project, and how this was the first step in the biodiversity recovery in and around Shoreham Port in an attempt to become more sustainable. Taylor introduced recent research results that hypothesise that kelp might be 20% more efficient at carbon sequestration than trees. She also pointed out the importance of reminding ourselves how oceans can bounce back quickly once given the opportunity to do so (Taylor, 2021).

Proof of the ocean’s resilience was highlighted by the project carried out by the University of Genova in partnership with Greenpeace (Greenpeace, n.d.), when they showed how, during the Covid-19 pandemic, thanks to the decreased ships and boat traffic in the area, the local marine biodiversity of fauna and flora were able to restore and thrive very quickly, expanding to nearby areas. This gives us hope that if we act, things can change — a hope that needs to be shared with audiences when communicating the destructive anthropogenic effects humans have on the planet. These projects highlight how local knowledge and research are extremely important for global scalability. Local projects like Help Our Kelp can become models of design that can be reproduced elsewhere, and in other areas too. For example, similar principles are used in coral reef regenerative projects. Marine Deep Reefs (DR) are ecologically relevant benthic habitats acting as CO<sub>2</sub> sinks and attracting a highly diverse associated fauna. The multiple pressures DR are currently facing (e.g., climate change, fishery and littering) make the need to protect and restore these habitats more urgent. Several EU projects, including the Bauhaus of the Seas, proposed interventions along these lines (Consoli et al., 2019).

### **3.2 Flow and other stories**

Aqueous logic is still an ephemeral concept when it comes to design practices. A methodology is still being discovered and distilled from various and different case studies. We are describing a few in this text, or rather, we propose a way of operating that accounts for watery logics of unpredictability and interconnectedness between human and more-than-human bodies.

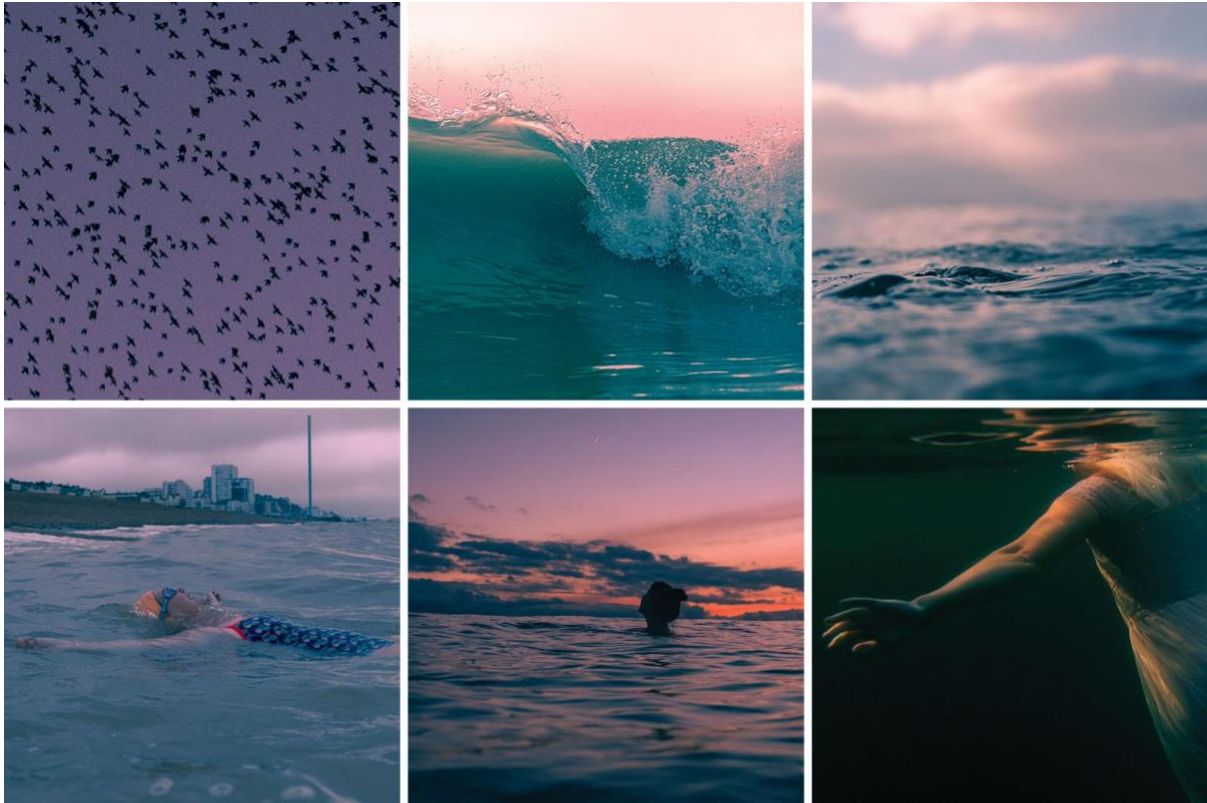


Figure 2. Swimmers in Brighton, UK. Source: Flow book, Beatrice Maggipinto's Masters' dissertation (Maggipinto, 2021).

An example of aqueous logic was the process and outcome of Flow, a film documentary work investigating women's bodies and their acquired relationship with bodies of water. Flow is a research through design artefact that brings to life the interviews through photography, the moving image and reflections (Maggipinto, 2021).

Six women were interviewed in Brighton, UK, by the filmmaker of Flow, reflecting on the way this relationship transformed their self-perception and their way of thinking about their role in the environment. The filmmaker interviewed marine biologists, activists, community leaders and artists. The conversations led us, interviewers and interviewees, to reflect on how our bodies, minds and surrounding environments are connected — immersed at sea. Documentary participants highlighted how in the water, body and mind have to become one, synching with the natural environment we're immersed in. Seas have a predictive component: tides, swells, temperatures, but also one that we, as terrestrial beings, can't control: the strength of the waves, currents and wildlife and the effects those have on our body and our psyche. The mechanisms of our bodies and minds alone are somewhat unpredictable to us too. While our bodies are at the mercy of waves and currents, our minds try to predict immediate consequences and the way we need to move to adapt to them. As we adapt, we repeat the same mechanism of observation and adaptation, while slowly synchronising with the aqueous environment. From the interviews in Flow, several themes emerged, from reconnection with the environment to build a more sustainable lifestyle, to ocean conservation and regeneration, to regaining confidence over the ageing body. The process of producing Flow, as well as the topics highlighted during the interviews, are examples of aqueous logic in action.





*Figure 3. A selection of images from the Flow book, portraying Brighton seascape, starling murmuration and a few of the interviewees in the project - in particular Cath Brown, co-founder of Salty Seabirds, and photographer Lexi Laine on the bottom images. Source: Flow book, Beatrice Maggipinto's Masters' dissertation.*

In recent years, we can observe a rise in design artefacts that have aqueous logics embedded in the processes or outcomes. Similar to the above work, Ralph Vituccio's documentary piece, *Haenyeo*, dives into the world of freediving fisherwomen on the island of Jeju, South Korea (Vituccio, 2019). The portrayal of this fading tradition talks of sisterhood and interdependence: women with women and women with the sea. What is taken from the sea, is what is necessary, respecting the rhythm of regeneration the ecosystem needs to have to sustain itself and the human community around it. Women depend on one another to survive in the freediving practice, pushing the boundaries of their bodies and adapting to the water. This process is also well described in the fiction novel *The Island of Sea Women* (See, 2020), and also cited in documentary materials about the Ama tribes in Japan (MacEacheran, 2016; VICE News, 2017).

Further, Lexi Laine, interviewed in the process of producing *Flow*, reflects on the female body, its shape, its aquacity, and the ability to heal and be healed through what we could recognise as an aqueous logic stance. She reflects on the reappropriation of a space, the seas, culturally dominated by a male presence. From art to navigation, oceans have been "conquered" and explored by men, in a way that has always been precluded to women. Times have been changing only in recent years, with female sailors, sportswomen and artists portraying the seas with new eyes, in an era in which healing and regenerating are particularly needed because of the climate crisis.



Figure 4. On the left, is an image from the *Flow* book, portraying Lexi Laine shooting the picture on the right. Source: Beatrice Maggipinto's Master's dissertation and Lexi Laine's archive (Maggipinto, 2021).

Another project that exemplifies the aqueous logic, is the digital game *Abzu* (Maggipinto et al., 2023). The game uses meditative aesthetics, relaxing soundscapes and intriguing puzzles to bring the player into a world of peace and beauty, showing how underwater beings are connected with one another. In *Abzu*, the theme of hydrocommons becomes a tangible, physical concept to be experienced, felt, shared, and embodied, not through the spoken word, but through the senses of vision and sound just like when in water, the body relies on vision, sound and touch to adapt and survive.

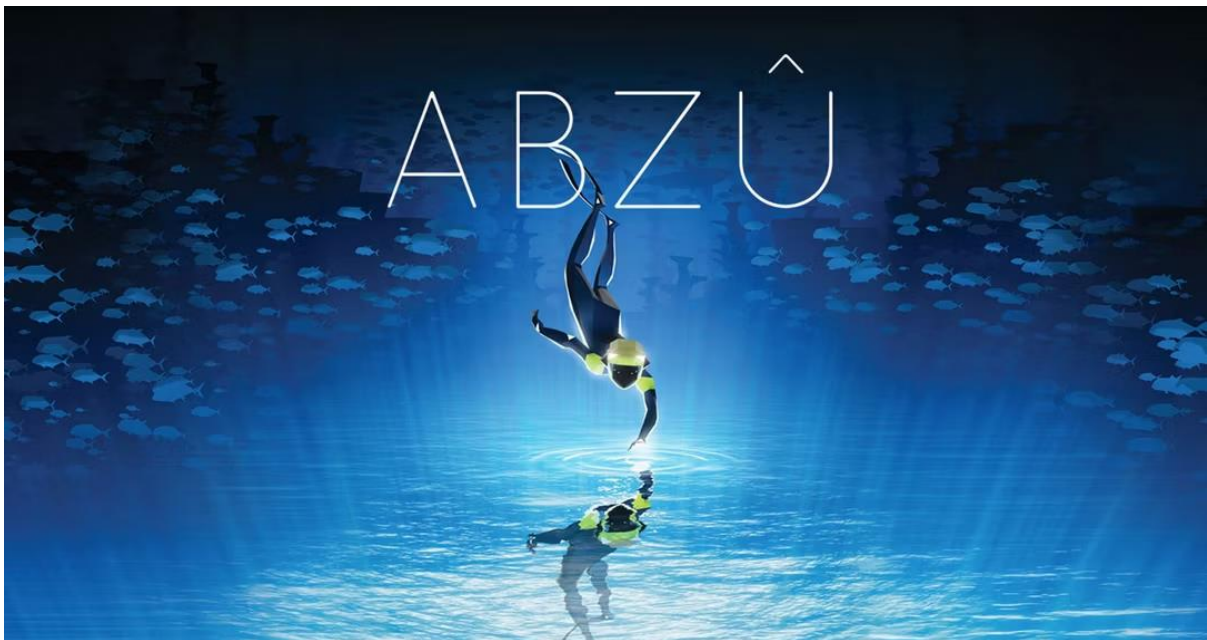


Figure 5. *Abzu* game cover art. Source: *Abzu* game website (Giant Squid, 2017).

#### 4 Discussion: towards an “Other logic”

Ultimately, Aqueous Logic builds on Ezio Manzini's vision of the Earth as a complex organism to heal, rather than a machine to be repaired and simplified (Bauhaus of the Seas NEB, 2021). Similarly, Astrida

Neimanis, talks about what she calls “the other logic”: a less individualistic and more globally connected way of thinking (Neimanis, 2009). Gunter Pauli advocates the adoption of non-linear logic in the economy, mimicking nature’s interconnections and non-linear transformation (Pauli, 2017). From literature and philosophy, Margaret Atwood and Donna Haraway both state, the future isn’t linear. There isn’t just one future, but many different possible ones that can unfold very differently (Haraway, 2016; TheNexusInstitute, 2012). In this context, Haraway talks about sympoiesis, as those evolutionary systems that don’t have defined spatial or temporal boundaries and hold the potential for surprising change (Haraway, 2016). According to the authors of “Uncertainty & Possibility”, intuition and turning unpredictability into opportunity is at the core of design research, “animating and propelling creative exploration” (Akama et al., 2018). Sustainable design research and practices benefit from non-linear logic and more “fluid thinking” to generate creativity and respond to the uncertainties of the climate crisis.

Steve Mentz, in his proposal to change English vocabulary to a more watery one, also calls for more fluid logic. He proposes to change the word progress to flow, interpreting progress as a too linear a word for our times, while flow evokes a more cyclical, almost tidal, thinking. This would make historical narratives less absolute, more confusing and less familiar (Mentz, 2020).

In summary, to think fluidly, we propose a logic that embraces the uncertainties of the years to come, with feminist sensitivity, courage, and hope. Borrowing from Miyazaki Method of Hope, we promote the relationship between hope and knowledge, highlighting a concept of hope that is produced in various forms of knowledge (Miyazaki, 2004). Miyazaki describes hope (as he encounters it in his studies of Fijian rituals) as a form of consciousness, with momentum for thought and action, as opposed to the Freudian notion of the subconscious, which can shape of mind and behaviour, rather than in a way that promotes the relinquishing of responsibility.

As tidal flows come and go, aqueous logic provides a sense of possibility pervading our futures. Through aqueous logic, we recognize the non-predictive and non-linear nature of post-anthropocentric interventions, allowing a wide and open-ended horizon of possible outcomes to be hoped (and acted) for. By allowing a wide range of practices and narratives to emerge, we allow hope to enter the stage and influence our futures.

#### **4.1 Summary of discussion points**

This paper probes a range of different research directions to propose a new kind of logic emerging from the combination of the following key points.

- It considers research through design focused on sustainability-related topics such as nature and ocean conservation, climate change communications and feminism and well-being at its core.
- It challenges the “gloom and doom” narrative that has been dominating sustainability and climate change communications, but it hasn’t always been successful. There is a need for new, more positive, empowering narratives that consider a notion of care, embodiment and more-than-human connections.
- Following Donna Haraway's call for improved feminine reproductive freedom worldwide, this paper proposes a more fluid and free way of thinking about our being in the world,

immersed in its waters, ocean and nature conservations become the primary goal of our cohabitation.

- Inspired by Astrida Neimanis' post-humanistic stand of considering bodies of humans and other-than-human as hydrocommons, part of global water cycles, the authors think of new water preservation and conservation ecologies, including our bodies in the loop.

In summary, this paper proposes a more fluid, non-linear, more confusing and less familiar but nevertheless hopeful form of thinking to inform Sustainable Design Research and practices to respond to the uncertainties created by the Anthropocene. We call this stance Aqueous Logic.

## 5 Conclusions

By looking at the converging point of several different points of view: activism, feminism, care and hope, sustainability, nature conservation and climate change, the authors advocate for a new thinking mode (s)- what is referred to as Aqueous Logic, which reflects on how the seas' can teach us to design new ways of knowing, researching and creating that force us to constantly adapt, like the body in waves, to new, unpredictable circumstances. In this paper, the authors propose a fluid and flowing stance through which design and research about sustainability and nature can enact a new kind of logic - an aqueous one, with liquid and uncertain qualities at its core. Aqueous logic can be described as a "form of imagination to fuel hope and desire for transformative action" (Ticktin, 2019). In this light, through Aqueous logic and thinking, we can envision restoring some hope that the future can be better (and not necessarily worse).

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