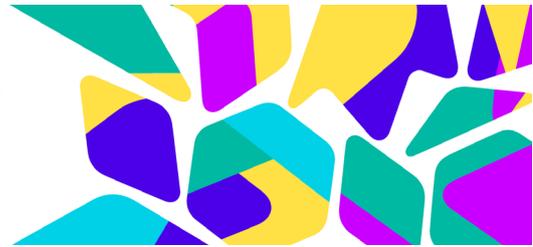


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Putting the trans* into design for transition: reflections on gender, technology and natureculture

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Abstract: Over the last five years, design for transition has emerged as a prominent critical paradigm in designing for sustainable futures. Transition design approaches are united in their aim of reorienting design practices to address global environmental catastrophe and societal inequality. Nevertheless, the discussion of gender and sexuality is notable for its absence. One exception is Arturo Escobar’s (2018) *Designs for the Pluriverse*. In this paper, I take Escobar’s discussion of gender as my starting point. I suggest that by utilising the concept of “Mother Earth” Escobar risks essentializing gender and biology and limiting the transformative potential of technology. I argue that transition design would benefit from queer feminist and queer indigenous perspectives that advocate for a non-binary approach. I go on to consider what it would mean to put the “trans*” into transition design.

Keywords: transition design; queer feminism; gender; natureculture

1. Introduction

As an emerging field, design for transition encompasses a range of theories, methods and tools aimed at intervening into socio-technical systems to move towards sustainable and equitable futures. The majority of approaches emphasise the interconnectedness of social, economic, political and natural worlds and utilize systems thinking. For example, transition design, devised by Terry Irwin et al. at Carnegie Mellon University, aims to design for complex adaptive systems and draws on living systems theory which focuses on dynamic patterns between organisms and their environments. It advocates “the reconception of entire lifestyles [at the level of the everyday], with the aim of making them more place-based, convivial, participatory, and harmonizing them with the natural environment” (Irwin, Kossoff, Tonkinwise, Scupelli, 2015, p.1). As such, it aims to develop a “cosmopolitan localism” or “pluriversal” approach to design and recognises the value of indigenous ways of living. The transition design movement acknowledges that to create change we must move beyond institutional and disciplinary boundaries. There is also a consensus that environmental



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sustainability cannot be addressed without rectifying social inequality, and that, for the West, ontological reorientation is needed. This includes exploring narratives, mindsets and visions of alternative ways of being outside of possessive individualism. In light of the recent bushfires in Australia and amidst the Covid-19 pandemic, transitional design approaches seem all the more relevant and necessary.

Nevertheless, while there are substantial references to global inequality in design for transition, there has been significantly less discussion of gender and sexuality. Indeed, a number of academics have called for an increased focus on power and politics in the movement, as well as wider methodological engagement with other disciplines including feminism (Boehnert, Lockton and Mulder, 2018; Gaziulusoy and Öztekin, 2019). As a response to this call, in this paper, I consider the theorisation of gender and sexuality in *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds* by Arturo Escobar (2018). I recognise that autonomous design is slightly different from transition design, however, Escobar's work is cited regularly in the field, and is the only text to extensively explore feminist perspectives. While I am largely in agreement with Escobar's arguments about design for transition, I put forward some reservations, specifically around gender and the nature/culture binary. I argue that queer feminist and queer indigenous perspectives should inform transition design and I offer the beginnings of a methodology for putting the trans* in transition design.

2. *Designs for the Pluriverse* and Ontological Design

Designs for the Pluriverse by Arturo Escobar (2018) explores and furthers the work of designers "who have already embarked on the project of design for transitions" (p. xii). Escobar asks "can design's modernist tradition be reoriented from its dependence on the life-stifling dualist ontology of patriarchal capitalist modernity towards relational modes of knowing, being and doing"? He considers whether design approaches can be appropriated by communities to strengthen their autonomy and whether ontologically oriented design can transform the ways we live with each other and the Earth? (2018, p. xiii). In response to these questions, Escobar develops an approach that is collaborative and place-based: an accessible pluriversal approach to world-building where "many worlds fit" (Zapatista quoted in Escobar, 2018, p.16). He describes the transition movement in the design community and explores connections with the work of social movements and indigenous groups in the Global South. *Designs for the Pluriverse* is a wonderfully ambitious book with so much to offer that I cannot go into all its arguments here. The critique of dualist ontologies and the discussion of ontologically oriented design are particularly relevant to the arguments made in this paper, so I discuss them in more detail here.

As Escobar's (2018) introductory question points out, design has been (and arguably still is) heavily reliant on modernist discourse that reproduces dualist ontologies of "mind/body, self/other, subject/object, nature/culture, matter/spirit, reason/emotion" (p.25). Design has contributed to the current environmental crisis and the unequal world that we find ourselves

in today. To move beyond these dualisms, Escobar documents critique from a range of perspectives including feminism. For example, drawing on the work of ecologists and feminists, he writes of how mind/body, culture/nature, and man/woman divides have been “foundational to patriarchal cultures, reductionist forms of science, disembodied ways of being, and today’s ecological crisis” (p.121). He argues that it is not the existence of dualisms that is the problem, it is the hierarchies between binaries and their social, ecological and political consequences, that we should take issue with. The critique of dualisms, he suggests, has not only become commonplace in academic discourse, but it is increasingly apparent in intellectual and activist domains. Escobar attributes this both to the challenges of climate change and a “reflection of the fact that nobody really performs as a pure wound-up Cartesian toy” (p.131). Thus, he explores the “ontological turn” that considers how the world can be otherwise: alternative visions and autonomous world-building that fosters inclusion, participation, connection and care.

Design approaches are not excluded from this ontological turn and Escobar (2018) writes about the ways that ontological design, which includes transitional approaches, has the potential to reimagine and reconstruct local worlds. Ontological design recognizes that in designing tools we are designing ways of being (Winograd and Flores 1986, xi as cited in Escobar, 2018, p.134). Escobar gives the example of the way that the Amazonian indigenous maloca (indigenous longhouse) encultures human and non-human relationality through its design, in contrast to a suburban American home that raises “decommunalised individuals” (p.140). He writes “[o]ntologically oriented design is therefore necessarily both reflective and political, looking back to the traditions that have formed us but also forwards to as-yet-uncreated transformations of our lives together” (p.146).

Escobar’s arguments regarding the radical possibilities of ontological design are informed by the work of Tony Fry. For example, Escobar suggests that an ontological design approach is formative in Fry’s arguments regarding the need for design that is about sustainment rather than sustainability. According to Escobar (2018), Fry argues that humans today are “constituted within a naturalized artificial ecology created through design and technics; this means that nature becomes a “standing reserve” to be appropriated” (p.150). Fry argues that humans have always been prosthetic beings entangled with their tools and with the rise of modernity the artificial has become all the more naturalized. Therefore, the only available option at this time of crisis is to adapt by artificial means and to develop a posthuman notion of the human that critically embraces the possibilities of new technologies. It is here that while in agreement about a need for ontological reorientation, Escobar seems to differ to Fry in terms of his approach to technology. For example, he (2018) writes:

“[i]t would be pertinent to ask whether Fry succeeds in articulating a view of the future different from that of the techno-fathers of geoen지니어ing, synthetic biology, the great singularity, and the like; in other words, whether his proposal gains sufficient distance from the ontology of appropriation and control that so naturally inhabits the techno-futurist visions related to the artificial”(p.150).

In conclusion, Escobar returns to consider design with/out futures. He considers the bifurcation taking place regarding “posthuman” futures which he suggests involves two paths: “return to the earth” and “the human beyond biology” (p.40). It is clear which side Escobar is on. He writes that “[r]eturning to Earth implies developing a genuine capacity to live with the profound implications entailed by the seemingly simple principle of radical interdependence” (p.258). Whereas “the human beyond biology” is the “total transcendence of the organic basis of life dreamed up by the techno patriachs of the moment” (p.258). Escobar leaves us with the question of ‘how shall ontologically oriented design face the quandaries of life beyond biology and asks whether design will be seduced by the promise of unlimited growth, novelty, power, adventure, and wealth. I return to consider this below.

3. Gender and Sexuality in Designs for the Pluriverse

In Escobar’s (2018) discussion of the wide range of work that critiques life-stifling dualisms, he spends significant time discussing feminist approaches, specifically those from the Global South. He argues that “[f]eminists from the Global South are particularly attuned to the manifold relational politics and ways of being that correspond to multiple axes of power and oppression” (p.90). Feminists, he suggests, have a strong genealogy of thought that emerged from the exploration of situated knowledge, the corporeal and intersectionality which is reflected in a contemporary feminist commitment to other ways of worlding.

Notable for its absence, however, is any mention of queer theory or activism that has been instrumental in challenging the binaries of sex and gender and imagining different sorts of futures. Escobar does refer in passing to the idea that gender maybe something “life-stifling”. He (2018) writes:

“Whether the concept of gender is even applicable to preconquest societies, or even to contemporary non-Western and nonmodern societies, remains a matter of debate, given the relational fabric that, to a greater or lesser extent, continues to characterize such societies, which admits of no strictly separate and preconstituted categories of masculine and feminine” (p.90)

When outlining his philosophy of “strong relationality” without subjects, objects and processes that exist by themselves, he (2018) writes of “the bisexual spider god/goddess Anansi” in the Fanti-Ashanti tradition from the Gulf of Benin (p.250). However, the bisexuality of Anansi is not highlighted as significant.

The omission of queer feminist and queer indigenous perspectives is important not only for its theoretical import but also because it misses the potential for connection with lived experience. Increasingly one of the common ways in which people are questioning and challenging binaries in their everyday lives is through their sexual and gender identities. For example, there have been several popular books exploring non-binary being, thinking and feeling in recent times (see Iantaffi and Barker, 2019; Mandelo, 2012; Ryle 2019). These books contain arguments about relationality, community and care that are remarkably similar to Escobar’s. While it can sometimes be a ‘cheap shot’ to critique authors regarding

omission, I believe the lack of discussion of the design of a pluriversal world from a queer feminist perspective points to a number of issues with Escobar's theorization of gender and technology.

In the introduction to *Designs for the Pluriverse* Escobar outlines the stakes involved in creating "a world where many worlds fit" (Zapatista quoted in Escobar, 2018, p.16). Drawing on Claudia von Welhoff, he (2018) argues that is patriarchy that is the "source of the contemporary civilizational model that is wreaking havoc on humans and nature" (p.32). Patriarchy based on hierarchies and domination has prevailed over matriarchal cultures respectful of relational and place-based forms of living. He (2018) suggests that "Matristic cultures were characterised by conversations highlighting inclusion, participation, collaboration, understanding, respect, sacredness and the always-recurrent cyclic renovation of life" (p.32). He is keen to emphasise that matriarchy does not mean the dominance of women over men, rather that life is defined by a different conception of life for everyone. Escobar writes that "in the beginning, there was the mother (in the last instance, Mother Earth)" (p.32) and this is a relationship that continues to be the case for many indigenous people today. For example, he writes of indigenous people in the Americas who are engaged in the "Liberación de la Madre Tierra (the Liberation of Mother Earth)" who argue that it is time to abandon the "superstitious belief in progress and the modern epoch as the best of all worlds" (p.36). He points to the arguments of von Welhoff regarding the creation of "new matriarchies" that are "inspired by matriarchal principles of the past" (p.37) adapted to the contemporary moment. At the end of the book, Escobar returns to consider "The liberation of Mother Earth as Design Principle" (p.240). He argues that "a plural sense of civilizational transitions that contemplates—each vision in its own way—the Liberation of Mother Earth as a fundamental transition design principle is the most viable historical project that humanity can undertake at present" (p.241).

In this last sentence, Escobar remembers to add "each vision in its own way", yet one is left with the lasting impression that a progressive future involves new matriarchies liberating Mother Earth. While I agree with the analysis of patriarchy in *Designs for the Pluriverse*, I believe that holding on to the concept of Mother Earth and "new matriarchies" is problematic when adopted outside of relational cultures. The conflation of conditions of inclusion, participation and collaboration with a more "natural" maternal figure essentialises biology and gender when not accompanied by indigenous onto-epistemologies. The association with "woman-nature" reproduces the dualisms of nature/culture, feminine/masculine, male/female that have proved to be so life-stifling. While the mother figure may only be used as a metaphor, as Catriona Sandilands (1997) argues, the constructed "woman-nature" (p.19) relies on a stable notion of identity that is easily assimilated into patriarchal hierarchies of domination. She goes on to suggest, contra to the arguments of ecofeminists such as Val Plumwood, that queer feminism has much to offer ecofeminist politics. Sandilands (1997) does not believe, and I agree, that the "destabilisation of identity as a political construct and the creation of liveable stories for the future are mutually exclusive projects" (p.19). Identity has never been a stable category and it would be a dreadful

mistake to require it to be so in the name of a sustainable future. Drawing on the work of Sandilands, I would suggest that the concepts of “Mother Nature” and patriarchy limit radical possibilities, and that transition design should draw on alternative visions that are not so easily gendered or natured to imagine relational futures. I believe that queer feminist discussions of technology offer possibilities here, and it is to these I now turn.

4. The cyborg, nature/culture and the future

The research of Donna Haraway is fundamentally important to any discussion of feminism, technology and nature. While I do not have the space to do justice to her extensive body of work here, I summarise the points that offer an alternative perspective on gender, sexuality and ecojustice. In the seminal text *Simians, Cyborgs and Women*, Haraway (1991) famously argues that identity is contradictory, partial and strategic. She writes that “there is nothing about being female that naturally binds women” (p.149). With this in mind, she develops the coalition myth of the cyborg, a creature in a “post-gender world” that cannot be contained by the dualisms of mind/body, nature/culture, human/non-human. In fact, as Sandilands (1997) argues, the cyborg “thrives on its lack of closure, on its resistance to any form of categorical symbolisation (except the misinterpretation of the “cyber” part)” (p23). Thus, coalition is made through affinity building “that privileges the inevitable partiality of any position in a chain of alliances” (p23). “In the cyborg view of affinity, the subject position is offered up to others with the express purpose of experiencing its failure; the ‘thing that is shared’ is [...] the experience of radical contingency itself” (Sandilands, 1997, p.23).

Haraway’s world is one in where we create “partial connections not universals and particulars”, a world where “nature” incorporates people, organisms and technological artefacts. This is not an approach to entanglement that legitimates technofixes and market growth (see Boehnert, 2018), but is a theory of ecological relationality inspired by a feminist ethic of “response-ability” (Haraway, 2016). For example, in *Staying with the Trouble*, Haraway (2016) documents how estrogen links “an aging California dog, pregnant mares on the western Canadian prairies, human women who came to be known as des daughters, lots of menopausal U.S. women, and assorted other players” (p.105). She writes that it is no longer news that corporations, labs, technologies and multispecies lives are entangled but the details matter. The details, she suggests, require us to be responsible for multi-species flourishing. Having eaten Premarin makes Haraway (2016) “more accountable to the well-being of ranchers, northern prairie ecologies, horses, activists, scientists, and women with breast cancer than [she] would otherwise be” (p.116). She concludes, we are all responsible, but not in the same ways. ‘The differences matter—in ecologies, economies, species, lives’ (p.116).

The Covid-19 pandemic has propelled the ethics of entanglement into global consciousness. As Andreas Philippopoulos-Mihalopoulos (2020) writes:

“The ethics of withdrawal before Covid is a show of a planetary collectivity, where we finally understand that our bodies are all connected, and that taking precautions in London will

mean that more people will survive in the refugee camps or in the less developed world with more fragile health systems. It is ultimately a show of removing oneself from the mania of 'progress', with its global pollution, climate change and anthropocenic irreversibility, and allowing the planet to take a breath." (para 8)

Inequality inevitably means the impact of the pandemic will not be equally felt (see Jones 2020), nevertheless, perhaps we can utilise the feeling of interconnection to create more sustainable futures.

To become more sustainable, Haraway (2016) provocatively insights us to "Make Kin Not Babies!" She argues that if there is to be multispecies ecojustice, it is about time that feminists "unravel the ties of both genealogy and kin, and kin and species" (p.102). Thinking about kin beyond ancestry means that all earthly things share common ground. Our ancestors, Haraway argues, turn out to be "very interesting strangers; kin are unfamiliar (outside what we thought was family or gens), uncanny, haunting, active" (p.103). Making kin is about "becoming-with" because our becoming is contingent on the flourishing of a myriad of others. For example, cyborgs are kin made up of historically situated machines, organisms and human beings.

In her approach to technology, Haraway's arguments resonate with Fry's in that they both think that situated technical projects, and the people who take part in their creation, offer possibilities for more positive life and death. As Haraway succinctly puts it, "the task is to make kin in lines of inventive connection as a practice of learning to live and die well with each other in a thick present" (p.1). Being truly present would mean orientation away from narratives of techno-scientific salvation towards cultivating an ethics of care for people, animals, plants, places and things for generations past and for those yet to come (Haraway, 2011). A technoculture with this orientation would have a "familial, generational duty to their failures, as well as their accomplishments" (2007 par 9). Speculation fabulation and speculative feminism in Haraway's (2016) world become propositions and patterns for participants to inhabit, a means of crafting "conditions for finite flourishing on terra, on earth" without attempting to return to Edenic pasts (p.10). Haraway's work questions the bifurcation of the "return to the earth" and "the human beyond biology" that Escobar uses to frame the future of technology, and provides a feminist design ethic for "life beyond biology" (Escobar, 2018, p. 258).

There has been a recent resurgence in feminism that draws on Haraway's *Cyborg Manifesto* and explores the radical possibilities of technology. Xenofeminism, as coined by the collective Laboria Cuboniks, proposes a queer and trans-inclusive feminism with the view to repurposing the tools of capitalist technoscience. Xenofeminism, as Helen Hester (2019) suggests, is an "anti-naturalist endeavour that frames nature and the natural as a space for contestation – that is, as within the purview of politics" (p.19). The "natural" order, Hester writes, has nothing to offer those who have been deemed "unnatural in the face of reigning biological norms", queer and trans people, differently-abled and "those who have suffered discrimination due to pregnancy or duties connected to child-rearing" (p.20). As it states in the Xenofeminist manifesto, "[n]othing should be accepted as fixed, permanent or "given"

– neither material conditions nor social forms”, and this includes biology (Laboria Cuboniks, n.b.). This is not to deny that bodies have different biological capacities, rather that “biology is not a synonym for determinism, and sociality is not a synonym for transformation” (Wilson quoted in Hester, 2019, p.21).

The Xenofeminist Manifesto also argues for gender abolitionism built on an anti-naturalist agenda. Abolition, as Laboria Cuboniks argue, does not mean to eradicate gender from the population, rather, like race abolitionism, it aims to abolish gender discrimination. Xenofeminism is a call for “gender post-scarcity” and for the proliferation of genders. “Let a hundred sexes bloom!” insights the manifesto. In this process, Laboria Cuboniks stress the need to render binary gender norms laughable. Xenofeminism is an intersectional project and Laboria Cuboniks are clear that “every emancipatory abolitionism must incline towards the horizon of class abolitionism” (Laboria Cuboniks, n.b.). The call for the proliferation of genders is insightful because it can include a multitude of experiences. As Alyssa Battistoni puts it, there is no problem with people feeling that having a womb makes them close to the earth, as long as “anyone who wanted to could have a womb, and people with wombs could do things other than making babies, and if we recognized that there are a lot of ways to be close to the earth through use of our bodies, whatever parts we might have (and however technologically mediated they might be)” (2018, para 23).

Through the technomaterialism, anti-naturalism and gender abolitionism of Xenofeminism, Laboria Cuboniks are interested in creating an alien future. Hester (2019) further explores the possibilities of a xenofeminist future beyond reproductive futurism. Drawing on Lee Edelman’s arguments about the future as a heteronormative construct represented by the cult of the child, Hester (2019) argues that we must be careful not to foster “the supreme value of species survival as a discursive technology of compulsory heterosexuality” (p.54). To look for alternatives she turns to Haraway’s concept of “making kin not babies”. Hester takes Haraway’s slogan in two parts and is critical of the call for a reduction in human numbers because it seems “curiously weightless, floating free of the entanglements and troubles with which [Haraway] usually so doggedly stays” (p.60). This is particularly true to its relevance only to the “privileged, disproportionally resource-demanding classes of the global north” (Hester, 2019, p.57). Hester is also, rightly, dubious of any framing of climate change that lets capitalism off the hook, suggesting that it “might be a more productive move to start from the systemic effects of surplus value extraction” (p.56).

Hester (2019) argues that the call to make kin across species, however, offers possibilities for a future-oriented politics beyond the horizon of the family. She suggests that xenofeminism cannot “form punitive disdain regarding the reproductive choices of others” but must be grounded in “xeno-hospitality”. Xeno-hospitality is a mutational politics accommodating new desires and committed to the opening of ideological and material infrastructures. Citing Haraway’s speculative fiction she talks of the possibility of a post-gender world where multi-parent genetic engineering is possible. A world where making kin includes making babies.

With this in mind, perhaps, instead of designers resisting the seduction of the powerful

imaginary of life beyond biology as Escobar suggests, designers should focus on creating technologies that make kin and foster multispecies ecojustice. As the work of Haraway and Laboria Cuboniks demonstrates, technology, from synthetic biology, nanotech and geoengineering to the simplest of tools, are not only in patriarchal hands: we are all entangled, albeit in different ways and with significantly different amounts of power. Hester turns to feminist self-help and 'amateur' practices to give an example of Xenofeminist technology. I think that transition design also has the potential to create feminist technologies that would enable earth and all the life on it to flourish.

5. Putting the trans* in transition design

A significant part of transition design, as defined by the Carnegie Mellon Transition Design Framework, aims to reshape the posture and mindset of designers and their communities. As part of the transition design seminar syllabus, student designers are encouraged to develop their critical awareness by exploring theories and practices of diversity and equity including "autonomous design" (Escobar, 2018) and the "matrix of domination" (Hill Collins, 1990). One suggested reading deals with LGBTQ+ issues: Part 1: Traveling While Trans: Design Justice, A.I. and Escape from the Matrix of Domination by Sasha Costanza-Chock (2018). The article begins with Costanza-Chock describing the experience of walking through a security scanner at the airport as a trans person. They powerfully describe the embarrassment and humiliation caused by the cis-normative assumptions built into the A.I. technology. Costanza-Chock goes on to argue for design that is aware of intersectionality and the matrix of domination, and that works to listen to the voices of those who are marginalized, targeted, erased under this matrix. They cite the significance of the work of Escobar, and the importance of designing a "world where many worlds fit" (Zapatista quoted in Escobar, 2018, p.16). I would argue that this is why (in addition to the imperatives of critical pedagogy and authentic participation) it is paramount that the conceptual and methodological frames for design for transition allow for all non-binary identities. We need to make sure that our frames do not reproduce the dualisms that we are trying to dismantle.

The very name, "transition design" could do some of this work. In her discussion of indigenous transgender and transcultural practices, Maddee Clark (2017) suggests that "rather than only articulating trans identity as the categorically imposed colonial assignation, trans can be positioned as a constitutive mode of seeing and relating" (para 5). Drawing on Eva Hayward and Jami Weistein, Clark notes that "trans* is not a thing or being, it is rather the processes through which thingness and beingness are constituted. In its prefixial state, trans* is prepositionally oriented—marking the 'with', 'through', 'of', 'in', and 'across' that make life possible" (para 5). Clark documents how Hayward directly links trans* with Haraway's notion of "becoming-with". The transgender body is produced in a context of "shared vulnerability ... open to the planet", reliant on the becoming of others in order to become" (para 6). Clark uses the concept of "becoming-with" to consider how "geopolitical trauma" can open up a space for relationality and mutual dialogue among indigenous trans people (para 6). Trans* illuminates the contingent and non-binary nature of identity and

our interdependence on all forms of life. In its radical contingency it offers potential to unite women, trans, queer, and first nations communities while holding difference within these markers (Allen cited in Clark, 2017, para. 9).

Trans*ition design, then, would acknowledge that to be “one at all, you must be a many” and would appreciate the importance of destabilising the stories built on the dualist ontologies of patriarchal capitalist modernity (Haraway, 2014, para 2.). It would recognise that nothing is fixed including biology and would help us to explore the ethical complexity of our entanglements. For example, when applied to the gendering of domestic life, a wicked problem if ever there was one, a shift to focus on “becoming-with” could be profound. The smart home and its associated technologies usually render the experiences of anyone other than the “straight white man” invisible (Chambers, 2006). However, what if they were reimagined as a site for kin making. How could we configure homes to accommodate a multiplicity of genders and create living arrangements beyond the family and amenable to multi-parenting beyond genetics? Could we normalise gender as choice through the design of the home including integrating technologies for hormone creation and monitoring for example? Instead of the eradication of bacteria, pests, and mould, could we create environments that work with the life we find in our homes, such as utilising schizophyllum and mycelium found in fungus to breakdown toxins and create biodegradable materials?

A “trans*” world-view is not new. Indigenous communities have many ways of expressing “becoming-with”. For example, as Elizabeth Kerekere (2015) suggests, in Maori culture “[t]ipua were supernatural creatures who could change form or gender. Tipua can be seen today in takatāpui [Māori who identify with diverse sexes, genders and sexualities] who embody both female and male in remarkable ways” (p.12). Kerekere (2017) tells the story of “the ancestor Tāwhaki who was on a journey when he encountered Tongameha, a tipua (spiritual force who had the ability to change form and gender)” (p.65). Tongameha changed their male form into a beautiful female in an attempt to seduce Tāwhaki. Other tipua included Hine-ngutu, a knot of totara wood, and Pururau, a fish that was easily recognisable because a small tree grew from its’ head (Gudgeon, 1906, p28.). Tipua are non-binary entities traversing the human and non-human, the male and the female, the supernatural and the real, the past, present and future. Stories of tipua tell us how to become-with. By hearing these stories we make kin with all sorts of uncanny ancestors.

These lifeforms are not simply rhetorical. The “Blob” a slime mould (*Physarum polycephalum*) found all over the world under leaves and logs “is neither a plant, an animal or a fungus” (Zaugg, 2019, para 3.). The mould can adapt to its environment, split into different organisms, fuse back together and share what it has learned. It has “spatial memory”, “problem-solving prowess”, and “over 720 sexes” (Specktor, 2019, para 6.). The “blob” eludes classification and its very existence should cause us to reflect upon how we make sense of the world. As humans, particularly those raised with Western ontologies, we have a lot to learn about “becoming-with”, and we have even more to learn about how we utilise technology to do so.

Rather than reaching for technofixes built on salvific narratives of modernity, or attempting to return to an elusive Edenic past, when designing for the transition we should turn our attention to the examples of “becoming-with” that already surround us.

6. Conclusion

One may well ask, how does a trans*ition design that aims to prise technology from the patriarchy proceed? As I hope to have documented in this paper, in the first instance, trans*ition design is about changing our frames so that everyone, including women, queer, trans and indigenous people, can be included while holding onto their difference. I have argued that to address social inequality and to work towards feminist ecojustice we must move beyond “woman-nature”. This would mean deconstructing and resisting the binaries of sex and gender that manifest themselves in both design discourse and designed objects as well as creating opportunities for understanding the multiplicity of subject positions. The “becoming-with” of trans*ition design points to our shared vulnerabilities and dependence on others, human and non-human. In being vulnerable we share our failures and as designers we recognise and are made accountable for our actions. Indigenous and scientific stories about remarkable trans* creatures question the dualisms upon which western ontology was built. Indeed, in systems analysis, it may well be the “wild things” that elude classification that tell us the most about our relationships with people, animals, places and environments (Attfield, 2000). Through a detailed examination of these things, we can gain a greater understanding of how to cultivate an ethics of care for our planet that is both critical of the impact of technology, as well as open to its possibilities. Most of all, trans*ition design should be able to adapt to new desires and ways of becoming, making sure that we all live and die well in the trans*ition.

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