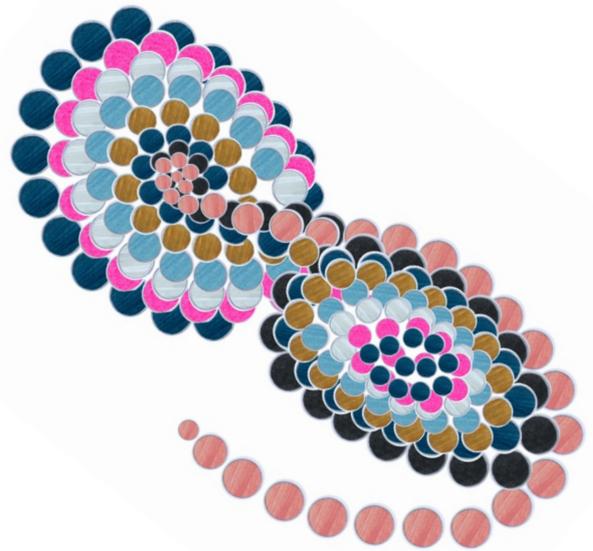


THE J J CHARITABLE TRUST



EARTH LOGIC

Fashion Action Research Plan

Kate Fletcher & Mathilda Tham

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This version of Earth Logic has been designed to be read on screen.
A print version is also available.

Preface

This research plan comes from a place of deep frustration, fear and sorrow. Although the fashion sector today has understanding of its ecological impacts and the urgency of addressing climate change is now globally and formally accepted, little is fundamentally shifting.

The plan also comes from a place of deep knowledge. We have long worked in the remit of fashion and sustainability alongside a large community of people who share our concerns as well as the notion of what is needed. We need to profoundly rethink fashion. This systemic change includes addressing the economic growth logic which currently drives the fashion sector. If the sector is serious about climate change, biodiversity loss and the interplaying social and economic injustice - like many who work within it claim - then systemic work is essential.

This deep knowledge includes awareness of resistance to change, especially to paradigmatic change (for example it took Darwin 40 years to pluck up the courage to launch his theory of evolution because it clashed with the dominant Christian paradigm. But he did it). We are not naïve. Questioning the economic growth logic causes resistance, with a number of strategies kicking in, typically: ridiculing, the directing of attention elsewhere (whataboutism), discreditation of the messenger, and, of course, reverting to the dominant paradigm to find explanations, reasons to reject and so forth. We also know that questioning the growth logic meets especially strong reactions when combined with a feminist standpoint, such as offering care as a way forward.

Yet, we think this time many of you will listen. At the time of writing, Greta Thunberg has mobilised young and old climate strikers all over the world. When asked by the US Congress about her recommendations for change, she said: follow the science and take action. Here we are pushing for everybody: researchers, industry, policy makers, media, citizens, among others, to take urgent action

and to follow the persuasive science – which gives us just a decade to avert catastrophic climate change. Whereas previously, ideas like those presented in this plan were often termed illogical; today more and more people are seeing that it is business-as-usual that is illogical. If we really want to save this beautiful planet, future generations of all species including ourselves, our livelihoods and those of future generations, we must place earth first. We must dare to take a leap out of the current paradigm.

This is the time to be brave, to try what we have not yet rehearsed, to stretch our imagination. We see all parts of our society having important roles in this future (a future which has to start now) and this includes industry. We are eager for a major business to explore how it could apply earth logic, how it could operate within a changed paradigm of earth first. This will benefit all of us on planet earth, including humans.

This is what this plan invites you into. Welcome.

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Summary

The Earth Logic Action Research Plan for fashion is a visionary and radical invitation to researchers, practitioners and decision makers to call out as fiction the idea that sustainability can be achieved within growth logic and instead to ‘stay with the trouble’ of envisioning fashion connected with nature, people and long term healthy futures. The plan does this by placing earth first – before profit, before everything. This is both simple and changes everything.

The starting point of the Earth Logic Plan for fashion is the uncompromising deadline of a decade to avert catastrophic climate change and recognition that the necessary shift in knowledge and behaviour is dramatic. For materials, this is forecast to require a reduction in the quantity of resource use of between Factor 4 and Factor 20, that is between a 75 percent and 95 percent reduction when compared with today’s levels.

The scale and speed of change required means that genuinely systemic efforts are needed. In the fashion context this means addressing not only the environmental impact of a fashion product and the processes of making it, but also the psychology behind fashion use, our systems of economics, finance and trade, how we fashion local and global infrastructures around clothing, how we construct meaningful lives and livelihoods. Rethinking fashion outside the economic growth logic shifts power from multinational companies to organisations, communities and citizens. It invites fashion creativity to flourish far beyond the confines of a garment, into visions of new relationships between people, other species, artefacts and technologies.

The plan comprises three parts to support Earth Logic action research in fashion.

Part I is a values-explicit context that also acts an evaluative framework which can be used to plan and select research and development projects and for the continuous evaluation of research.

The values are: Multiple centres; Interdependency; Diverse ways of knowing; Co-creation; Grounded imagination; Care of world; and Care of self.

Part II is a checklist to keep action research on a radical track. Working in an earth logic (rather than growth logic) way can raise difficult issues as well as feelings. It is important to plan for this dimension of working for sustainability.

Part III is made up of six holistic landscapes that set out progressive areas for transformation of the fashion sector directed at the whole system of fashion. This includes reformulating industry towards care and maintenance and letting industry be but one of several sectors and life spheres driving fashion. Each of the landscapes specifies practices that can take place today and act as the grounding focus for action research. They offer possible research questions and speculate as to who can be involved, in which places and timeframes. The first three landscapes concern the transformation of fashion directly and the subsequent three, fashion's supporting structures and processes:

1. LESS: Grow out of growth
2. LOCAL: Scaling, re-centring
3. PLURAL: New centres for fashion
4. LEARNING: New knowledge, skills, mindsets for fashion
5. LANGUAGE: New communication for fashion
6. GOVERNANCE: New ways of organising fashion

Introduction

AN ACTION RESEARCH PLAN RESPONDING TO AN UNCOMPROMISING DEADLINE

This document details a research plan for facilitating sustainability change in the fashion sector as a precursor to shaping a programme of fast action in the area. Corresponding to the JJ Charitable Trust's ambitious endeavour to initiate behaviour change in fashion towards sustainability goals, the plan sets out a progressive, sharp and political programme of research.

The plan starts from the simple but radical idea of putting the health and survival of our planet earth and consequently the future security and health of all species including humans, before industry, business and economic growth. This approach of putting *earth first* is, we suggest, essential if we are to strike out upon pathways that genuinely address both the scale and speed of change required within the climate emergency. It is now formally accepted that the time frame for averting the devastating effects of climate change is a **decade** (IPCC, 2018) and that this will affect all sectors, including fashion, in profound ways (Harrabin, 2019).

We, this report's authors, see it as imperative that **all** activity counts towards meeting this deadline. It is in this spirit – of coming together to foster urgent change by recognising the deep-rooted and systemic nature of the challenges that are being faced in the fashion sector – that this action research plan has been created. We have called this report an 'action research' plan deliberately. Our interest is not with creating knowledge that sits on library shelves. Our explicit concern is with actionable change.

Fashion and sustainability context

The fashion sector is shaped by economic and cultural processes and a market-driven cycle of consumer desire and demand. It is bound up tightly with systems of consumerism and economic growth based on rapid product obsolescence and continually increasing throughput of resources. These processes play out through the creation, distribution, use, reuse and eventual disposal of physical products, i.e. garments. Each stage within the lifecycle of fashion is associated with environmental and social costs.

Since work examining the environmental and social impacts of fashion activity began in the early 1990s, understanding has solidified about both the urgency of change and the fashion sector's global impact (Fletcher, 2014 [2008]). This understanding chiefly focuses within the supply chain, where for example, it is reported that 25 percent of chemicals produced worldwide are used for textiles (AFIRM, 2014) and 20 percent of global industrial water pollution caused by textile dyeing and finishing (Kant, 2012), factors which contribute to the environmental footprint of clothing being recorded as high in relation to other products (Chapman, 2010). Also a focus is levels of waste after purchase, where each year, clothing to the value of over \$500 billion is lost due to their underutilisation and lack of recycling (Ellen MacArthur Foundation, 2017). Indeed in the UK, clothing of an estimated worth of £140 million goes to landfill every year (WRAP, 2017). These challenges are set to increase as clothing consumption globally is projected to rise by 63 percent by 2030, from 62 million tons today to 102 million tons, an equivalent of an additional 500 billion T-Shirts (Global Fashion Agenda and Boston Consulting Group, 2017).

The picture gains more complexity with the implications of the fashion industry's major relocation of production over the last 50 years from the global North to the South and East in search of low labour costs. Fashion is typically manufactured from little valued and indiscriminately sourced raw materials involving a process of intensive commercialisation. Clothes are standardised and produced at scale in a business model of conspicuous over-production known as 'fast fashion' in which low prices feed and enable over-consumption. Downwards pressure on prices is usually accompanied by a downwards pressure on production standards resulting in a 'race to the bottom'. As mills and factories compete on price for contracts, this impacts hard on workers, production facilities, their

environments and communities. The collapse of the Rana Plaza factory in Bangladesh in 2013, with the appalling toll of death and injury, and repercussions across families and communities, is but one example of the wide ranging social toll of the fashion industry.

Yet at the same time, the fashion industry also contributes to livelihoods and communities. The sector's size and the manual dexterity of the work of fashioning garments means that the clothing industry employs of 25 million workers worldwide, especially women, and it contributes to their independence and can support the establishing of infrastructure in poorer countries. While its production is environmentally destructive, fashion can also be seen to constitute a vibrant and innovative economic and sociocultural field, offering values at individual, community, corporate and national levels. The omnipresence of fashion, its alluring emotional language and its pivotal role in the expression of identity formation and communication position it, as well as a driver of consumption and production, as a potentially auspicious agent of change (Fletcher and Tham, 2015).

Change, certainly, is essential. The scale of shift that is widely seen as necessary to protect the resource base is, at a minimum, that of Factor 4, i.e. a fourfold reduction in resource use and waste for all activities (Weizsäcker et al, 1997) (Figure 1). Put differently, Factor 4 is a reduction of 75 percent of resource consumptive actions, or the increase in the resource efficiency of these actions by three quarters. Less conservative estimates than Factor 4, of which there are many, suggest that in order to avoid climate collapse, targets for change should be closer to Factor 10 (where resource impacts are reduced by 90 percent) or even Factor 20 (a reduction of 95 percent, where impacts are one twentieth of today's levels) (Ehrlich and Ehrlich, 1990).

While Factor 4 is a sharp reduction that would impact our lives substantially; Factor 20 plainly is a massive constriction in access to resources. In the case of the typical British citizen, imagine restricting all the possessions you would ever own to those that fit into a small rowing boat. This would include everything for sleeping, dressing, washing, cooking, eating, entertainment, the tools of productive employment, the things we need for learning and fun. This is resource use change akin to Factor 20.

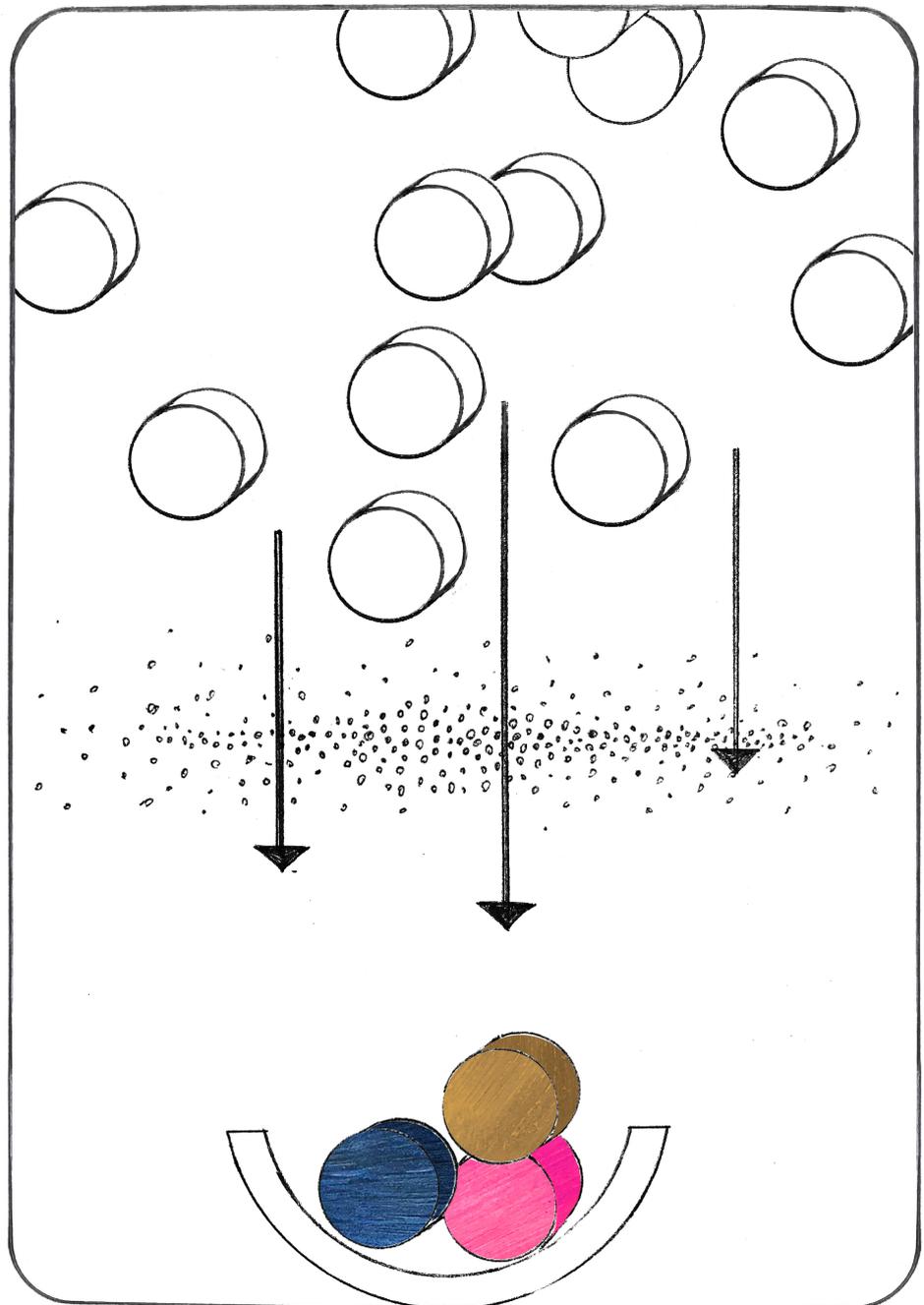


Figure 1 – Factor 4 reduction

The limits of current strategies for change

Despite the significant increase in awareness, interest, knowledge, measures and technologies directed to fashion and sustainability in recent decades; levels of environmental impact have shown no net reduction. In the Pulse of Fashion 2019 Update's words: 'Fashion companies are not implementing sustainable solutions fast enough to counterbalance the negative environmental and social impacts of the rapidly growing fashion industry' (Lehmann et al., 2019). This points directly at the limits of tweaking parameters like materials flows, where most efforts have been targeted historically, when the problem is systemic. In systems thinker Donella Meadows' words: 'Parameters are dead last on my list of powerful interventions. Diddling with the details, arranging the deck chairs on the Titanic. Probably 90, no 95, no 99% of our attention goes to parameters, but there's not a lot of leverage in them.' (Meadows, 1997)

Today there is awareness of impacts and opportunities for improvements across all the fashion lifecycle stages: conceptualisation, design, fibre cultivation/extraction, production, processing, transportation, sales, use, disposal, reuse, recycle or landfill incineration. The most comprehensive research programmes have connected the stages. These include Cambridge University's report Well Dressed (Allwood et al, 2006) and the Swedish funded Mistra Future Fashion's work on design, supply chain, use and recycling (Mistra Future Fashion, 2019).

Generally across the sector over the last five years, the preferred route to address problems arising from the fashion sector is through the circular economy. The circular economy works to close materials loops, recycling fibres and minimising waste. It incentivises resource efficiency by monetizing it and drawing reuse and recycling activities, some of which have long existed in the informal economy, into the market. The circular economy has gained traction and substantial interest perhaps because it aligns with existing commercial practices, suggesting that business-(almost)-as-usual is possible. Indeed, circularity is treated as a lifeline by industry reliant on a model of over-production and over-consumption of goods, an effective endorsement of contemporary economic and political practices. While the circular economy brings the promise of useful contributions to a more resource efficient industry (providing, that is, that the many challenges associated with technology, workers, scale, logistics, communities and entropy are overcome) yet, in

terms of affecting change of the scale and to a timeframe made necessary by the climate imperative, it has serious limitations. Perhaps most significantly, the circular economy is limited by being situated within the logic of economics and specifically growth economics. The circular economy is optimised to grow the circulation of materials, irrespective of whether this goal supports total systems improvement and the ecological reality of genuine biophysical limits. Situated within the paradigm that created the problems, and in addition to circulating resources, circularity risks circulating norms and worldviews detrimental to earth.

The majority of the environmental issues caused by the fashion sector are endemic, not incidental. They are a consequence of how the current model is structured. The better the sector performs, the worse the problems will get. To circumvent this, the Earth Logic Action Research Plan takes a different approach. While the impacts of the fashion sector are made manifest in the physical production of clothing and the associated drawing down of resources; we trace the roots of the crisis elsewhere - to the growth logic - and target this research plan at understanding and furthering a new context for fashion with changed values.

The Earth Logic Action Research Plan

The Earth Logic plan offers advanced starting points for research in the fashion context, working in areas already identified as well as those that are challenging, uncharted and potentially transformative. The plan also works as an invitation to those working in the sector to get closer to – and stay with – ‘the trouble’ (Haraway, 2016); that is to commit to the difficult, uncompromising task of trying to live better together on a damaged planet. The research plan draws upon extant research in the fashion discipline along with that from many other fields of study to create a progressive programme of work, the explicit aim of which is to transform the fashion system in order to change the objectives which the system pursues.

In the Earth Logic plan, two highly related aspects are considered throughout: (1) the development of new understanding and practice; (2) the processes by which this knowledge and action is uncovered and generated. This double focus on means and ends is, we suggest, critical to establishing changed practices that attempt to transcend

the paradigm in which the problems were created, in order (and following Einstein and Kuhn) to avoid replicating this paradigm. Therefore, our plan sets out to challenge a dominant paradigm; both in terms of where we direct research questions, and how we suggest knowledge and action is generated.

Methodology and reference points

This document draws on the authors' combined 50 years of work within fashion and sustainability; dialogue with the Union of Concerned Researchers in Fashion, a global network of over 400 researchers and practitioners in fashion and sustainability; the latest thinking conveyed at a wide range of events such as summits and conferences; recent fashion and sustainability reports commissioned by governments and industry bodies, as well as reports from adjacent fields. The list of references details the sources.

The Earth Logic plan draws on a series of key reference points. They have in common the understanding of systems thinking and all species' interdependence; the 'intersectionality' of colonialism, Western hegemony, patriarchy, human exceptionalism and growth logic in creating and reinforcing the current environmental predicament. Further it builds from acknowledgment that we have now entered a new geological epoch termed the Anthropocene, so-called because human activities are driving ecological shifts (Crutzen, 2006).

This research plan does not elaborate some concepts and perspectives which dominate other reports. It does not review key impacts or survey generic areas for action within fashion and sustainability. We avoid approaches that are not systemic and holistic. In practice this means that technocentric responses, such as artificial intelligence, synthetic biology, genetic modification, the circular economy and purely quantitative approaches, such as material indices and lifecycle assessment are not included here. Used with care, such approaches do have value as part of systemic and holistic approaches, but they are not in themselves radical enough to achieve change of the order necessitated by the climate emergency. They are not key levers of change. Significantly, they pose the risk of deferring radical change by instilling a false sense of progress. The research plan outlined in this document also excludes research directed to further illuminate and evidence the problems associated

with fashion activity. Again, this falls outside the scope of systemic, holistic and urgent change. We have known about the problems for long enough. Now is the time for action.

The Earth Logic plan employs action research. Originating in the areas of health and education, action research is a well-established field. We specify it because it involves synergistic research and change making; as it researches *with* rather than *on* people; and also because it draws on an extended epistemology, which means that it recognises that relevant, holistic and systemic knowledge arises from a combination of theory, practice, experience and processes of articulation. Central to the employment of action research are cycles of action and reflection. This results in an iterative grounding of insights in the local context as well as sense making in relation to the larger purpose (Heron and Reason, 2001). Action research is made robust because of these cycles and of continuous immersion in context, as well as because of dialogue with the research community (ibid). A key question action research asks is, ‘is [this work] worthy of human endeavour?’ (ibid) – a continuous reminder of the profound purpose of research. We regard the systemic approach and efficacy of action research – generating knowledge and change synergistically whilst practicing thoughtfulness and questioning ideas to be vital dimensions of conducting research with an uncompromising deadline in mind.

How to use this document

The Earth Logic plan is concerned with research that fosters change and action; not research that sits on shelves gathering dust. The urgency of the situation means that work cannot wait several years for publication in a peer-reviewed journal, and then more time still for other scholars to read and pick up on it. Rather, this plan is focused on generating new insights that are continuously and generously shared whilst information gathering is underway. A priority for the Earth Logic plan is the including of stakeholders in the research process so they can be part of making it relevant, communicating findings to key stakeholders as quickly as possible and welcoming feedback and influence along the way. Our concern is for the creation of an *activist knowledge ecology*, a platform for the parallel generation of knowledge, action, empowerment and change. This will include new models of working with multiple stakeholders from across disciplines.

The Earth Logic plan is structured in three parts:

Part I comprises a values explicit context for a plan of action research. This also can be used as an evaluative framework to plan and select research projects and for the continuous evaluation of research, ideally in dialogue between the funders and action research teams.

Part II is an acute list of points on considerations for research for urgent change. This is a checklist to keep action research on a radical track in, for many, an unfamiliar research territory. Working in an earth logic (rather than growth logic) way can raise difficult feelings. It is hard to leave a growth logic comfort zone. It can cause intra- and inter-personal frictions. It is important to plan for this dimension of working for sustainability.

Part III is made up of six holistic landscapes that set out progressive areas for work for transformation of the fashion sector. These are directed at the whole system of fashion. This includes reformulating industry away from growth and physical accumulation towards care and maintenance, and drawing on many more sectors and life spheres to shift fashion. Each of the landscapes specifies practices that can take place today and act as the grounding focus for action research.

We see dialogue around this material as crucial. Constant reflection and feedback mechanisms are critical in order to determine whether research is going in the right direction, achieving impact, reaching the right audiences. We deem the setting up of simple structures to facilitate both reflection and feedback as a first step in taking this work forward.

Many of the areas for action research that are identified within the holistic research landscapes (Part III) cut across each other and have the potential to corroborate, extend and develop each other. We envisage that by employing a generous and open approach to dialogue and dissemination of work-in-progress that synergies can be found and leveraged. This will require mutual trust, good will and investment of time on behalf of those involved and the setting up of appropriate forums where this can happen. Ideally roles would be dedicated specifically to cross pollination. Again we suggest that first steps to implement the Earth Logic plan should include the

development of structures and processes to support this process. We acknowledge that making sense of inchoate work-in-progress is not an easy task. We suggest using the values identified in Part I as an evaluative framework to guide assessment of the continuous ‘rightness’ of work and its potential contribution to fashion-sustainability change. These eight values are offered as a compass to help navigation through the work of step change in this area.

In broad terms we view the first three landscapes as dealing with questions of the ‘what’, ‘how much’, ‘where’ and ‘who’ of fashion and sustainability change. The second three largely examine ‘how’ this change will unfold. Within each of the landscapes we have made suggestions for practical and immediate actions implementable in a range of different contexts as well as those with a longer time horizon. The area of work that matters most is the one which is actionable by you, in your context, today. Time is short. Every decision counts. It is incumbent upon all of us to take action within the conditions of our own lives, to find ways to bring a sense of urgency and responsibility into our daily decision-making processes.

We envisage the work of Earth Logic to be carried out in many quarters; in communities, corporations, schools, university courses, non-governmental organisations, media groups and academia, among others. Most critically we see that this work happening when these stakeholders get together and participate collaboratively in the setting of research agendas and the implementing and testing out of ideas and practices of change. We see the outcomes of Earth Logic research applied in industry settings and outside them, in school and college curricula, in policy programmes, in community activities, in market squares.

Funding this work will involve securing finance from many sources and like the work itself, we imagine this will necessitate funding bodies collaborating to enable work to take place across and between formal and informal groups, including those with varying levels of demonstrable research track records and those working at a range of different time frames. This means the role of funding bodies, like other groups, will inevitably shift. In the case of this work’s funders, the JJ Charitable Trust, we see it also taking on a curatorial and mentorship role, keeping in dialogue with researchers and communities.

It is in the nature of radical proposals to be met with some resistance. Perhaps some will find the direction of the Earth Logic Plan unrealistic and too far removed from business-as-usual. The lenses of growth logic and earth logic certainly offer very different experiences of the world. In fact when looking earth logically, current industrial practices themselves appear unrealistic and too far removed from life. We sincerely intend this plan as an invitation for all kinds of energy, knowledge and creativity to join in the work that the health of our planet demands.

Part I

Values–explicit context

The Earth Logic fashion action research plan builds from a suite of explicit values that flow out of a paradigm where earth comes first. Paradigms, or the accepted models of how ideas relate to one another, constitute the purpose and meaning of systems. They are the frames of reference, stories and exemplars that enable us to think about a complex subject, work with it and achieve results that we can apply in useful ways. Often paradigms are invisible to us, as they are, so to speak, the water we swim in. Yet they inform everything we think and do, both as individuals and communities. The Earth Logic plan values context is made up of one critical condition - the necessary speed and scale of change; and one overarching paradigm - earth logic; out of which eight values flow (Figure 2):

- Multiple centres
- Interdependency
- Diverse ways of knowing
- Co-creation
- Action research
- Grounded imagination
- Care of world
- Care of self

This values–explicit context also acts as an evaluative framework that can be used to guide research and other initiatives intended to change the sustainability of the fashion system and check their appropriateness and relevance.

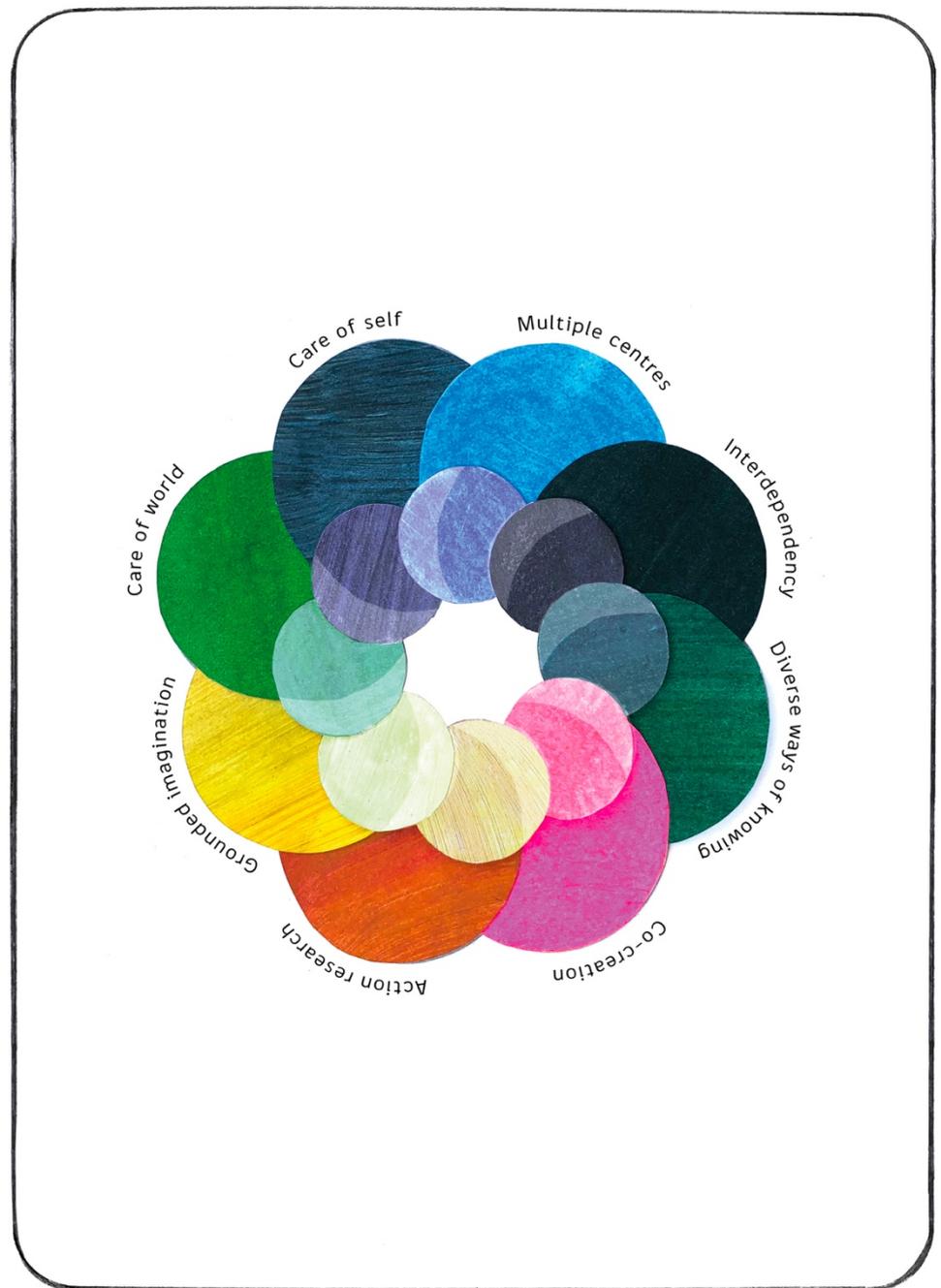


Figure 2 – Eight Earth Logic values

Condition: The necessary speed and scale of change

Saving our planet necessitates unprecedented action. This concerns both the urgent deadline to avert catastrophic climate change, a decade (IPCC, 2018) and the magnitude of change required, a minimum of Factor 4 (fourfold) increase in resource productivity (Weizsäcker et al., 1997).

The timeframe of ten years is the same as a child's time at school, one eighth of most people's lifetime, or ten annual reports for a business. Consider what you, your family, community, workplace will do in the coming ten years. Every moment will count.

The scale of factor 4, 10 or even 20 improvement in industrialised countries, means considering your home, workplace, food, fashion, travel and drawing a firm line around but a quarter (or a tenth, or a twentieth) of the resources, many of which are invisible in the final artefacts or services you access. This is your resource allocation. Again, this means every decision will count.

The complexity, speed and magnitude of the scale for change that we are facing, means we have to look at how we understand change. A metaphor for the brave, creative, comprehensive and responsible change which is needed maybe that of Braidotti's notion of transposition (2006), inspired by genetics and music. Transposition is, 'an intertextual, cross-boundary or transversal transfer, in the sense of a leap from one code, field or axis into another... It is created as an in-between space of zigzagging and of crossing: not linear, but not chaotic; nomadic, yet accountable and committed; creative but also cognitively valid; discursive and also materially embedded – it is coherent without falling into instrumental rationality.' (ibid: 5) (Figure 3)

Pivotal to fostering such change is the understanding that the systems responsible for the serious threat to our planet earth, are human made. Humans created growth logic, industrialisation, globalisation and petrol dependency and while some of these systems have been of great benefit to humans, some have also been detrimental to the planet's health and therefore also to that of humans. The imperative of action determines that is vital that we leave behind some of these logics and systems. Yet, from them, we can draw courage that we are able to create new systems fit for earth.

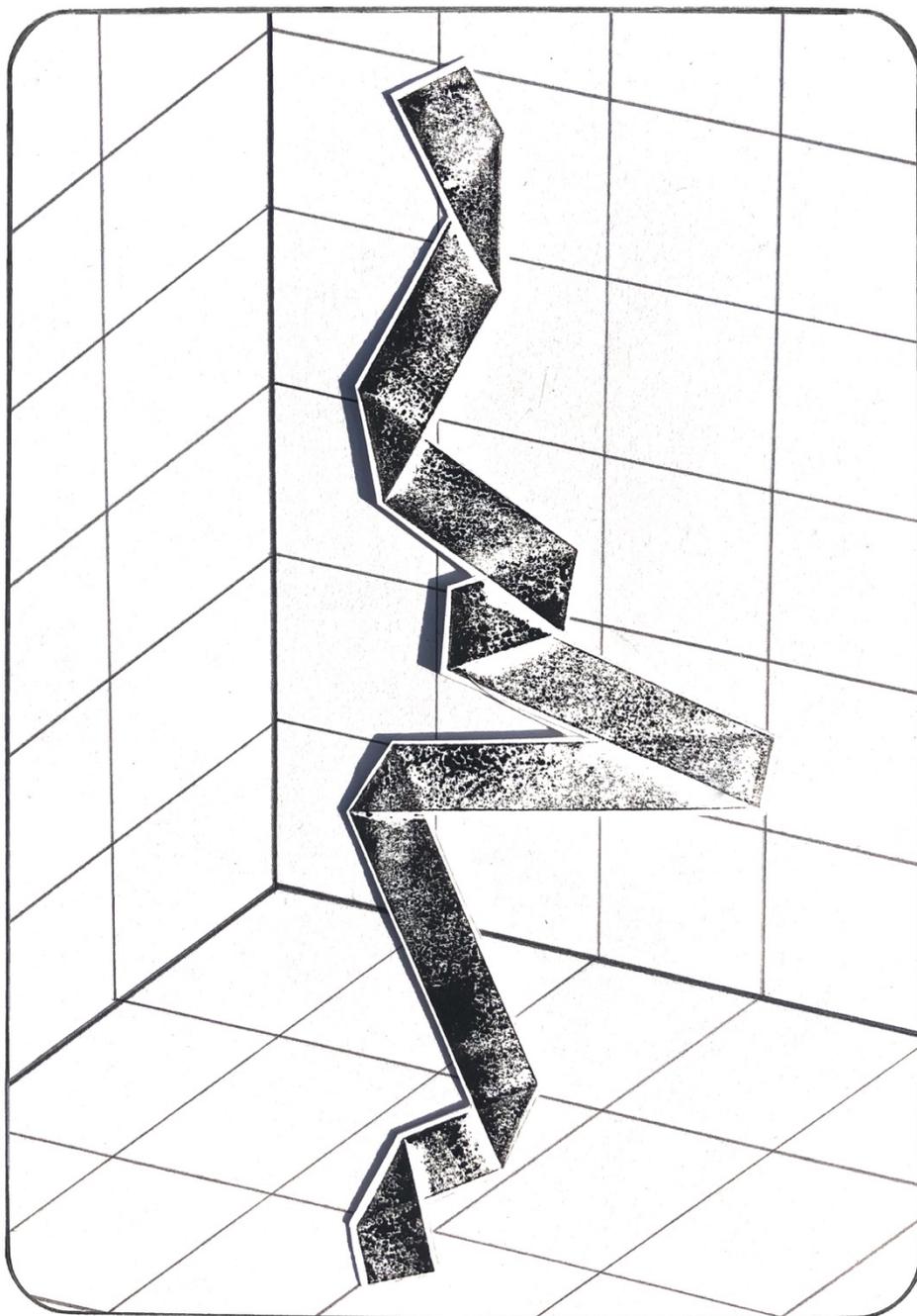


Figure 3 – Transposition

Paradigm: Earth Logic, Earth first. Loyalty to planet before industry, business and economic growth

We propose *planet before industry* as a **radical** idea in which the health and survival of our planet earth is given precedence over business interests. We see that whilst this idea may seem uncontentious and obvious (like for example, the notion that men and women are equal), it is the case that, even in environmental work, it is very far from being enacted. We see persistent double agendas, such as the combining of sustainability and economic growth which is claimed as a ‘win-win’ or where economic values are blatantly prioritised over all others, and that these are **key barriers** to change of the scale and speed required to save our planet. Many arguments against rapid and comprehensive change take place explicitly or implicitly under the banner of ‘the needs of the market’, whether this be upholding supply of clothes to growing populations, maintaining jobs for textile workers, or a general need for growth. This is plainly a distraction, as without a healthy planet all activities will cease. Earth must come first.

In this work we wish to evoke the significance of *staying with the trouble* (Haraway, 2016) in work for sustainability in fashion and beyond. Staying with the trouble means commitment to the true purpose - saving the planet - even when this causes friction, awkwardness, pain, anger and hard work. Only if we stay with the trouble, authentically focusing on putting earth first will our energy, knowledge and resources be available to dedicate to this work. This means that our day will start differently, our meetings will be run differently, our research and fashion practices will be different, as well as our collaborations, free time, our sense of identity and belonging in the world. It is easy and uncontentious to identify some practices and institutions as manifestations of the economic growth logic, such as over-consumption, fast food and cheap fashion companies generally. It can be harder - and perhaps more painful - to recognise other practices and institutions within the economic growth logic. Yet, education, academia, health care and the cultural sector also sit within it. Explicitly critiquing the economic growth logic in sustainability work often leads to being accused of being political and values-driven. It is important to note that the work to promote economic growth is also political and values-driven, only this is often invisible because it has become the norm, ‘the water we swim in’.

The new lens of earth logic is like a turn of the kaleidoscope, enabling us to see new patterns and configurations, new possibilities and pathways. We wish to evoke Meadows' (1997) insight that the most powerful way to change a system is at the level of the paradigm, where the goal and purpose of the system arises. She also emphasised that such a change – a new way of understanding a system – can be fast. Replacing the lens of growth logic with that of earth logic constitutes this paradigmatic shift. This way of seeing changes everything.

Eight values

Multiple centres

In the existing fashion system, the dominant focus is the economic growth logic and pursuit of profit. This constitutes a single focus of attention and reinforces human-centred priorities over the needs and at the cost of all others. By contrast, the values of earth logic explicitly promote plurality and multiple centres of attention and action. These include non-human species, nature, users, communities, non-Western perspectives, as well as the more usual priorities of finance, technology, among others. Together these displace business growth priorities as the central focus in the fashion sector (Escobar, 2018). They also include a multitude of disciplines coming together with citizens, governance, industry.

The Earth Logic Action Research Plan recognises how interlocking systems of power impact those perspectives and voices that are most marginalised. This can be described in terms of intersectionality, the accumulative effect of several grounds of oppression, such as racism and sexism, which so to speak, become greater than the sum of the parts (after Crenshaw, 1989). The economic growth logic simultaneously and cumulatively stages sexism, racism, ablebodyism, lookism, ageism, speciesism, as well as hierarchies of knowledge, prioritising theory, quantitative methods (Tham, 2019). In total this system of oppression enacts a vicious cycle of single focused monoculture, homogeneity and monopolies. Conversely, the earth logic paradigm creates a virtuous cycle where a celebration of multiple centres creates more confidence and space for more voices, leading to more creativity and bringing forth new possibilities.

Interdependency

“Humans exist only in a web of living co-vulnerabilities.” (Puig de la Bellacasa, 2017: 145)

The value of multiple centres is inseparable from interdependency. While multiple centres is the valuing of a broad and diverse map, interdependency is about the quality of the interplay between the diverse actors within this map. Human lives are inextricably reliant on planetary health and humans are intrinsically part of planet earth. The interdependency of human systems with all others makes processes of change real and complex. Interdependency underscores the ways in which individual products or human choices, often made with little concern for or understanding of the whole, combine in cumulative, layered, holistic effects that influence entire systems. Causality in complex systems is not linear or symmetrical. A small intervention can have a disproportionately large effect; events in one part of a system can create ripple effects across the entire system. Fashion practices *now, here*, have effects in other parts of our world and long into the future. Biodiversity loss and climate change cumulatively effect each other, as well as other vital earth systems (Rockström et al., 2009).

Urgent change therefore requires action and thinking that is concerned with relationality and interconnectedness, with what happens between things – all species, technologies, infrastructures etc – as well as what happens between things and across different timeframes. This is a shift away from research that pursues packets of discrete knowledge, at a distance from the real world. It represents a qualitative change in purpose of research institutions, which are as influenced by the growth logic as the industrial complex. Embracing interdependency and multiple centres in unison is about refusing to ‘be in a bubble’, separate and remote from the unfolding of the real world. It changes both understanding and the purpose of research itself.

Diverse ways of knowing

Multiple centres are a necessity to make sure that we are drawing on all knowledge, wisdom, capabilities and creativity on earth to save our earth. Multiple centres includes diverse ways of knowing; direct experience, practice, indigenous knowledge, artistic exploration, spirituality, and theory, among others. Such extended ways of

knowing are a central tenet of action research. The value of multiple centres and diversity, is well established in resilience thinking. Diversity spreads risks, responsibility, innovation and agency, so as to ensure the overlapping of functions and nimbleness of systems to respond to stresses and opportunities (Ostrom, 1999; Walker and Salt, 2006; Pisano, 2012).

Co-creation

The promotion of multiple centres and interdependency in unison foregrounds specific skills of *collaboration, listening, dialogue* and *linking*. None of these are new skills, but in this time of urgent, systemic change they come into sharp focus. Working ‘earth logically’ demands all of our amassed experience of these skills, as well as authentic dedication to co-creation between diverse actors.

In practice, co-creation requires a high level of collaboration between all involved which reaches beyond knowledge exchange and generates new ideas and actions. This entails deep attention to the quality of relationships within collaboration and to team-consciousness (Wood, 2010). Co-created outcomes have qualities of emergence, where inputs combine synergistically to create enhanced results often which cannot be planned and foreseen at the start of the process. While transdisciplinarity and co-creation have been buzzwords for a long time, they have been slow to be enacted. Probably, this is because they entail work that is less easy to classify, count and publish than that arising from single disciplines, again an economic growth logical effect.

Grounded imagination

In order to deal with the profound challenge of critical biodiversity loss and irreversible climate change, the role of imagination is crucial. It is important to note that imagination is different from fantasy or speculation. Imagination is not concerned with the fantasy of *escaping the conditions of the world*, which is what both economic growth logic (by insisting on living on ecological credit) and associated technological determinism (by insisting on ways of transcending the limits of earth’s capabilities) try to do. Instead, imagination is concerned with how *to join the world, within its limits*. Imagination is a creative living process and an agential force that starts with acknowledging the reality of our situation and

commits to ‘staying with the trouble’ of this situation. It shifts our attention away from the self-preoccupied space of fancy (‘earth has no planetary boundaries’), outwards towards others and our interdependency with those groups (Davison, 2017). The role of imagination is closely associated with multiple centres, interdependency, honesty and responsibility. Imagination is integrative, seeing actions in relation to the web of the whole. It is percolated by common sense, by the trusting of instinct and sensory experience and by our ability to choose and act rather than follow prescribed external rules and targets.

Care of world

The fashion system is dependent on flows of resources: fibre, chemicals, energy, water, human labour. The global environmental costs and consequences associated with fashion production and consumption are widely documented (Fletcher, 2014 [2008]), as is fashion’s toll on people (Siegle, 2011). The economic growth logic presents ecology as a subset of economy, where industrial priorities are framed as above and separate from ecological limits; and natural resources are available to support growth with few restrictions. This results in ecological debt, overshoot as well as disturbance of vital earth systems, and is evidenced by economic growth logic’s fantastical (escapist) approach to resource limits.

‘Care is everything that is done to maintain, continue, repair, “the world” so that all can live in it as well as possible.’ (Puig de la Bellacasa, 2017: 161; Tronto, 1993) ‘That world includes our bodies, our selves and our environment, all of which we seek, to interweave in a complex, life-sustaining web.’ (ibid: 3)

The notion of care can radically transform our engagement with fashion. Care is an earth logic paradigmatic shift away from the binary construct of production versus consumption staged by market thinking. Care is intrinsically relational, implying unfolding practices that nurture, grow, maintain, heal as opposed to the abrupt constructs of ‘selling, buying, binning’. Care is also contextual and situated, that is rooted in the local environment and community. Care strengthens, expands and invigorates relations between humans, materialities, natural world.

When we place earth first, matter is viewed differently. Ecological limits describe and define the type, the place, the scale, the

appropriateness of resource use. It is a switch from interest in ‘the environment’ as the source of commodified resources ready to be made into goods for trade, to the care of it, so that humans and non-humans can live in as well as possible in a mutual flourishing (Ehrenfeld, 2008). The notion of earth logical care ushers in a prospective new engagement with materials. It brings a new reverence for material qualities, for different practices of noticing, for greater emphasis on practical skills and manipulation of physical goods so that resources are more highly valued. It evokes resourcefulness, resource carefulness and parsimony, appreciation.

Earth logical care includes commitment to participants who have not managed, or are not likely to succeed, in articulating their concerns and cares. It cares about that the pricing of goods (like fashion clothes) reflect true environmental costs. It cares about conditions for workers and ocean health. Care complicates ideas of how to affect change by engaging with the specifics of different situations, the details of the real world. Care is concerned with others, including the material consequences of our fashion system and the redirection of the fashion industry towards new priorities.

Care of self

Change is non-innocent. Even change for what we think is good or necessary can mean loss, effort, friction, conflicts and dilemmas. Facing the reality of the ten year unyielding deadline to avert catastrophic climate change and the magnitude of the scale of change needed is daunting. We may respond with denial, cynicism, shame and guilt, anger, sorrow, paralysis, shock. There is also an absence of unity in the taking of action, unlike for example, in World War II, when messages from the media, politicians, communities, friends and neighbours mobilised citizen action at great speed and scale; today these messages are more ambiguous. It is possible, for instance, to pretend climate change and biodiversity loss is not true, to think that it does not concern me or my organisation. In fact, messages from many authorities, such as politicians, heads of companies and celebrities condone staying in the fantasy of inexhaustible natural resources. The resistance from proponents of an economic growth logic is strong, and often coupled with sexism and other intersected grounds of oppression. Engaging with change means recognising loss – of species, of lifestyles and of fundamental belief systems – of what it means to be a human today. We need to be braver than ever before. Therefore the work of change implicated

in caring for the world also requires *care of self*, with keen attention to building and maintaining personal resilience. We need resilience to cope with the stress of loss. We need it to cope with the inevitable conflicts, awkwardness, the processes of fast learning, adaptation and difficulties of travelling uncharted pathways. This may entail emotional, spiritual, mental, physical, social practices that help us to resource ourselves.

An Earth Logic action research plan for fashion is not complete without the care of self. Each practitioner-researcher and community need to make space for care of self, as well as for all participants' care of self. Again, there must be space for caring for relationships in collaborations, the quality of which are interdependent with the quality of care of self. There needs to be space for voicing difficult feelings as well as celebrating life, humour and having fun.

Part II

Earth Logic Research Implications

Part II of the Earth Logic plan sets out some of the implications for research of placing earth first. We suggest that the speed and scale of change required means some ideas of what has conventionally constituted good research work in the modernist era are no longer functional.

- *The withholding of action until full evidence is available.* The environmental predicament, as well as its socio-cultural and economic entanglements, has been known about for decades. During this time, research has been gathering evidence about the problem. We suggest that there is insufficient time to wait for large scale research programmes to gather and then report full evidence before we act. Instead, what is needed is to work in more nimble, iterative ways, where rigour is replaced with robustness. This can mean being immersed in context and collaborating with peers, being in continuous dialogue with relevant stakeholders, drawing on citizen science to create nuanced understandings, being open to new opportunities that arise during a process.
- *The pursuit of total knowledge of the full picture.* Current challenges are of such a magnitude and complexity (sometimes referred to as wicked problems) that an individual organisation can neither hold the problems nor solutions. Wherever we – as individuals and as part of organisations – are situated, it will be in the middle of the complexity rather than looking at it from outside. This means we have to make decisions on the go, with robustness arising from rootedness

in the local context, collaboration with local stakeholders of different sectors and disciplines, and in dialogue with other contexts. The strive for complete knowledge of the full picture will be replaced by caring for meaningful collaboration including a diversity of perspectives, and loops of action and reflection.

- *Perfection.* The pressing timeframe of environmental collapse does not permit waiting until perfect solutions are available and until we are perfectly prepared. This is a time for accepting good enough, again with robustness arising from commitment to purpose (earth first), collaboration with diversity of perspectives and reflexivity.
- *One step at a time.* The time frame and the complexity of our task, also means that work stages cannot be consecutive, for example, postponing an innovation phase until the research phase is complete. The work will need to be synergistically informative, inspirational, generative and transformative, i.e. creating knowledge, innovation and change at the same time. Working in a moving map like this requires agility, openness and willingness to learn on the go.
- *Heroics, lone genius.* The necessity of collaboration across a diversity of perspectives, of emergent work, and acceptance of ‘good enough’, means a culture shift away from hailing single individuals and ‘tada’ moments of genius to caring for and drawing rewards from the quality of collaboration and from growing relationships with earth. This, like many of the new conditions for working, has repercussions for the academy, for example how work is rewarded.
- *One size fits all.* In modernity, generalisations and standardisations have been a strong focus. The complexity and diversity of manifestations and conditions of the challenges and the scale and speed of the change required, means that work must seek situated responses rooted in the local context. A multiplicity of approaches will replace one size fits all.
- *Intellectual knowledge.* Since the scientific revolution, one type of knowledge has been prioritised over all others, that of thought and theory. Earth logic requires that we draw on

diverse ways of knowing: direct experience, indigenous knowledge, knowing from within the arts and much more. Earth Logic also demands that we place ourselves inside the challenges and their responses. We participate as individuals of a species together with other species; as knowledge holders from both personal and professional remits and as problem causers who directly or indirectly uphold paradigms, systems, processes and products contributing to environmental degradation. We also participate as solutions holders when we find agency and join in collaboration.

- *Prestigious dissemination routes and academic language.* Our situation demands an activist knowledge ecology. This means sharing insights underway in as accessible ways as possible. None of this work is for shelves. This work is about very real world problems, real world solutions, to be enacted by real world people.

Part III

Holistic Earth Logic Landscapes for Fashion Action Research

Part III outlines six holistic earth logic landscapes for fashion action research. We call them holistic because they engage with the fashion system as a whole: a plurality of actors coming together in co-creation, interplaying ecological, social, cultural, economic dimensions of sustainability, diverse ways of knowing and articulating knowledge needed for change, a range of geographies and timeframes.

Each landscape offers pathways for different actors and disciplines to collaborate. Each landscape contains an imperative to reformulate industry away from physical accumulation of goods and towards care and maintenance. In each landscape there is a role for each of us to play, already today. These are not fictions for the future. They are practices that have started, and can be started anywhere, specifically. Placing them somewhere will draw in different configurations of communities and create commitment and action suitable to place. The landscapes are also holistic in how they work together. They are not options, ‘this or that’ future, instead they overlap and support each other into a congruent whole.

The three first landscapes are focused directly on fashion activities. The last three landscapes are focused on processes needed to create, maintain, and evaluate earth logic fashion. They are:

1. LESS: Grow out of growth
2. LOCAL: Scaling, re-centring

3. **PLURAL:** New centres for fashion
4. **LEARNING:** New knowledge, skills, mindsets for fashion
5. **LANGUAGE:** New communication for fashion
6. **GOVERNANCE:** New ways of organising fashion

1. LESS: Grow out of growth

The concluding remarks of a multidisciplinary meeting at Cambridge University in 2016 (Allwood et al, 2017) were stark: yes, technology is good at reducing impacts associated with the production of material goods, but it has very real limits. Yet somehow a dream of a techno fix still permeates society. The only solution is less stuff. There are no other options.

The landscape of LESS develops the thinking and practice of living with fewer fashion goods and materials. Growth logic in the fashion context drives its opposite: a cycle of production and consumption of new garments that leads to a sector of ever-increasing size, the rate of growth of which outpaces the ability of efficiency strategies to mitigate its negative effects. Growth logic also promotes a narrow view of fashion, accessed primarily through the shopping mall, built on an increasing dependence on the market as the chief provider for fashion needs. It involves a cycle of self-justification, creating the very conditions by which it becomes both dominant and credible. In growth logic, ideas about fashion are organised around commerce and end up becoming dependent on them. Such fashion activity not only depletes the ecological resource base, but it also stifles other ideas about other types of fashion activity. Citizens are unable to take action – other than by buying more – even in the face of compelling evidence that different sorts of behaviour are needed.

Widespread clothing profligacy is a relatively recent phenomenon, traceable to lower per-unit costs made possible by the industrialisation of textile and garment manufacture that made mass-produced ready-to-wear clothing the standard mode of dress in the Global North from the 1950s (Wilson, 2003: 89). Yet even in the Global North, where some estimates report a 100 percent increase in the worldwide volume sold between 2000 and 2015 (Euromonitor, 2017), a period in which global population grew by around 20 percent; people have, within living memory, behaved differently. During the Second World War for instance, restriction and rationing was commonplace and mandatory. The ‘war footing’ fostered collective action based on reduction of demand for the survival of the country. A key realisation for living with less is that, in the midst of fewer materials, people are still dressed.

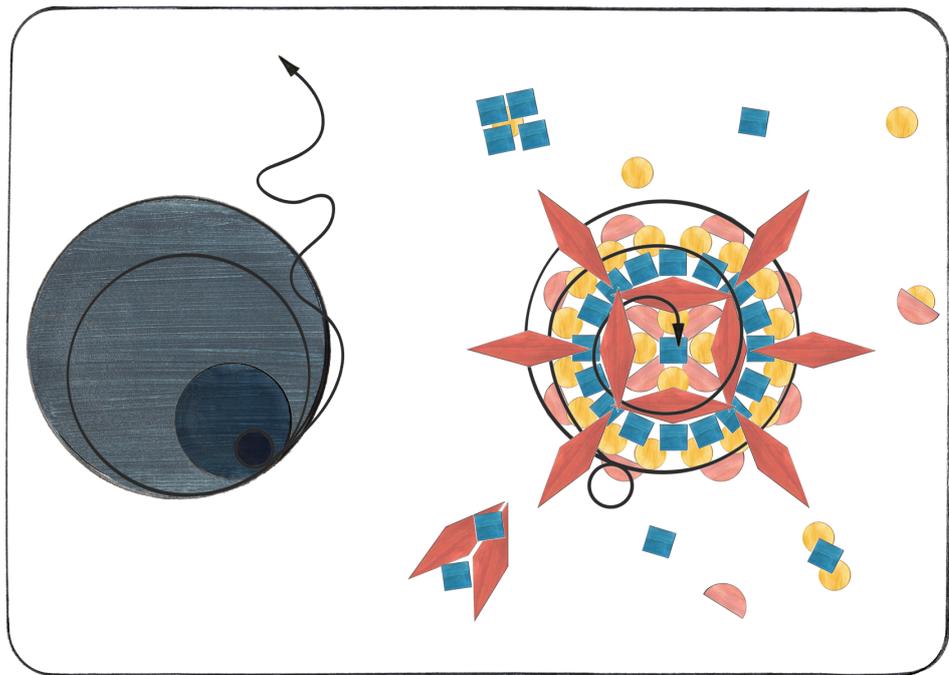


Figure 4 – A reduction in scale can lead to an increase in quality of fashion experiences

LESS is the largest provocation associated with transition to sustainability. Here lies the greatest temptation to veer into techno fixes. Yet, only by staying with the trouble of *less* can the scale of change deemed necessary be achieved. Instead of procrastinating with incremental reductions, we need to face the reality of less and address the real social-economic problems that *growing out of growth* creates. This includes employment of people in the textile and clothing industry.

The current situation requires mobilisation at greater scale than any war. We are on a ‘peace footing’ to save the planet itself, a vital part of this is rapidly shifting to less and developing an understanding of moving past growth as the defining goal of fashion activity. Less materials use will, in all likelihood, only come with less output, that is, with a smaller formal economy (Kallis, 2017: 1). A smaller fashion economy appears essential as other improvement strategies, like recycling or materials substitutions, have been shown to lead to more, not less, resource use. Likewise a shift to the service economy, has also been shown to embody significant amounts of energy and resources (ibid: 2).

Using fewer materials is a political activity, understood not as party politics, but as how it affects all citizens. It is also, at least in part, within the gift of citizens, as micro-practices of everyday care and maintenance of clothing hold promise of ongoing, resourceful fashion provision and expression (Fletcher, 2016). Further, these practices re-establish the locus of fashion action away from the market and onto the ‘economy’, in the original sense of the word, of household and community management. Caring for and on-going use of existing clothing are expressions of earth logic in that these actions are driven by a wide range of fashion activity not confined by the narrow lens of consumerism. Rather, they trade in the economies of time, creativity, community, imagination. They draw upon well-established practices including thrift, care for others, the gift economy, the informal hand-me-down channels through which clothes pass between friends and family. They stretch resources, making them go further, appreciating them in greater detail, infusing them with human warmth and memory, folding them into others’ lives.

Like the ‘war footing’ which drew on community action for creative resource use and support, the community is an important aspect in the shift to less. Since over-consumption is supported by mediation of aspirational lifestyles, with the result of conspicuous resource race, mobilising communities in working with less is critical in building resilience to withstand associated pressures. The interest in different forms of down-sizing, ‘de-cluttering’, as evidenced by the success of Marie Kondo’s (2017) approach to tidying, shows that a proportion of people are already experiencing unease at living with too much.

Flavour of the life

Once we genuinely understood that we could no longer live in a resource fiction, things changed quickly. I look back at my time of shopping for clothes almost on a weekly basis, and I do remember some thrills, but mainly anxiety and restlessness. There would be a sea of clothes on the shop floor and a sea of clothes on the floor of my kids’ bedrooms. We do different things now. Fashion is a pleasure, but in a slower and more grounded way. It is a relief to live for the future in my choices. I thought my kids would be upset when I said no more fast stuff, no more squishies, let’s keep what we have got going. Instead their adaptation was faster than mine and they value us sharing more time.

Stakeholders and disciplines brought together by this landscape

Economics, home economics, politics, psychology, sociology, consumer studies, anthropology, education, design.

Action research directionsLife with less

- Consider what happens when consumption activities take less of a priority; when more free time is opened up, what other things will we do?
- Investigate the essential skills and mindsets of users of less. What are survivalist practices? What does *less* sound, look, feel, smell, taste like? What are the essentials, the bare necessities of fashion provision and expression?
- Consider how we might rethink belonging, ownership, sense of identity in relation to fashion and clothing.
- Build greater knowledge of the practices of acquisition to build a broader ethos of use.

Drivers for less

- Develop a suite of case studies to explore the ways in which the fashion sector can grow out of growth.
- Build knowledge about auspicious starting points for explorations into less: which communities, practices, collaborations?
- Explore the role for communities and households in a shift towards less.
- What are the politics of less in fashion? Can they lead the development of new understanding in a range of arenas of daily life that share material and cultural dimensions?

New roles for fashion stakeholders

- Consider the impacts on workers, everybody who makes a living from fashion, from a smaller economy and design new livelihoods, within or outside fashion.
- Examine what happens to fashion design when it is set new problems not associated with creating new pieces.

Communicating less

- What are the stories of growing out of growth?

Scope, size, place, time

A smaller economy is a phenomenon that impacts macro and micro scales. It concerns both national policy and household decision making. Action can be taken by individuals immediately, indeed many micro-practices that will reduce materials use are well-known and simple to enact. The urgency of a concerted shift is underscored by a recent report that highlighted that Britons will buy 50 million throwaway outfits in the summer of 2019 (Smithers, 2019). Less may include: the craft of use, simplicity, co-operatives, disobedience, urban gardening, post-normal science, work sharing and other practices of degrowth (D'Alisa, 2015).

Where does this fit within the whole system?

A quantitatively smaller sector is a prerequisite for a system that is delimited by a finite resource base. A *reduction* in scale can however be accompanied by an *increase* in the quality of fashion experiences (Figure 4).

2. LOCAL: Scaling, re-centring

Positioning Earth at the top of a simple hierarchy above industry, in which nature-community is the superset and economics a subset, upends existing priorities for the fashion sector. In earth logic fashion, environmental and community priorities dictate industrial ambition, they describe natural and human limits to fashion activity. Yet because not all communities or ecosystems are the same, the activities within them – knowledge, communities, products, cultures and practices – require adaptation to their specific place. This process of adaptation is localism and involves the shaping of an activity by a region's natural factors and by what is intriguing and dynamic in a place to ensure its long-term prosperity (Fletcher, 2017). Localism favours the use of nearby resources, place-specific knowledge, community self-reliance. It gives expression to practices shaped by traditions, necessity, climate, imagination and a distributed form of authority, leadership and political power (Curtis, 2003) (Figure 5). Localism creates a sense of rooted identity and community, which energises the work. This is very different from the superficial branding of an area and its crafts. It is also not about insularity and protectionism. In contrast, the secure rooting in the community, enables generous sharing of knowledge, skills and resources.

The promise of localism for earth logic fashion arises from two main sources. First, the different ways power is divided when the scale of living is revised: smaller, local scales change the influence that people have over decisions that affect their lives. And second, the recognition that a community's well-being depends on the health of the ecosystems it lives within and which it is best placed to understand and affect. Localism concentrates economic and political power inside communities. It acts as a centripetal force, generating directions of travel towards the distinction of a specific ecosystem or group of people.

Localism influences both what and how much is made because the associated costs of each extra unit of production or service delivered will be borne in the same community that people are living in and the trade-off between cost and benefit negotiated. It introduces a feedback loop that is location-specific and which binds together a community's actions, their effects and responsibility for them. Because there are many places, localism takes many forms, many products, economic structures and social practices. It sits in

confrontation with the forces of globalisation and indiscriminately sourced raw materials, standardised products, intensive commercialisation, economies of scale and long-distance trade. David Fleming (2011: 389) describes localism as, ‘a rich earthy mixture of reciprocities and culture [which] will be the resilient successor to the market economy in the tasks of meeting material needs, sustaining social order and keeping the peace.’

Localism builds place-context into fashion, expressed as a dynamic mix of resources and interactions in an area: the sum of what a place can offer. It starts with what is available and uses material and social assets to shape a process of adaptation that serves to intensify a vision of what is important in an area, of what can be done there.

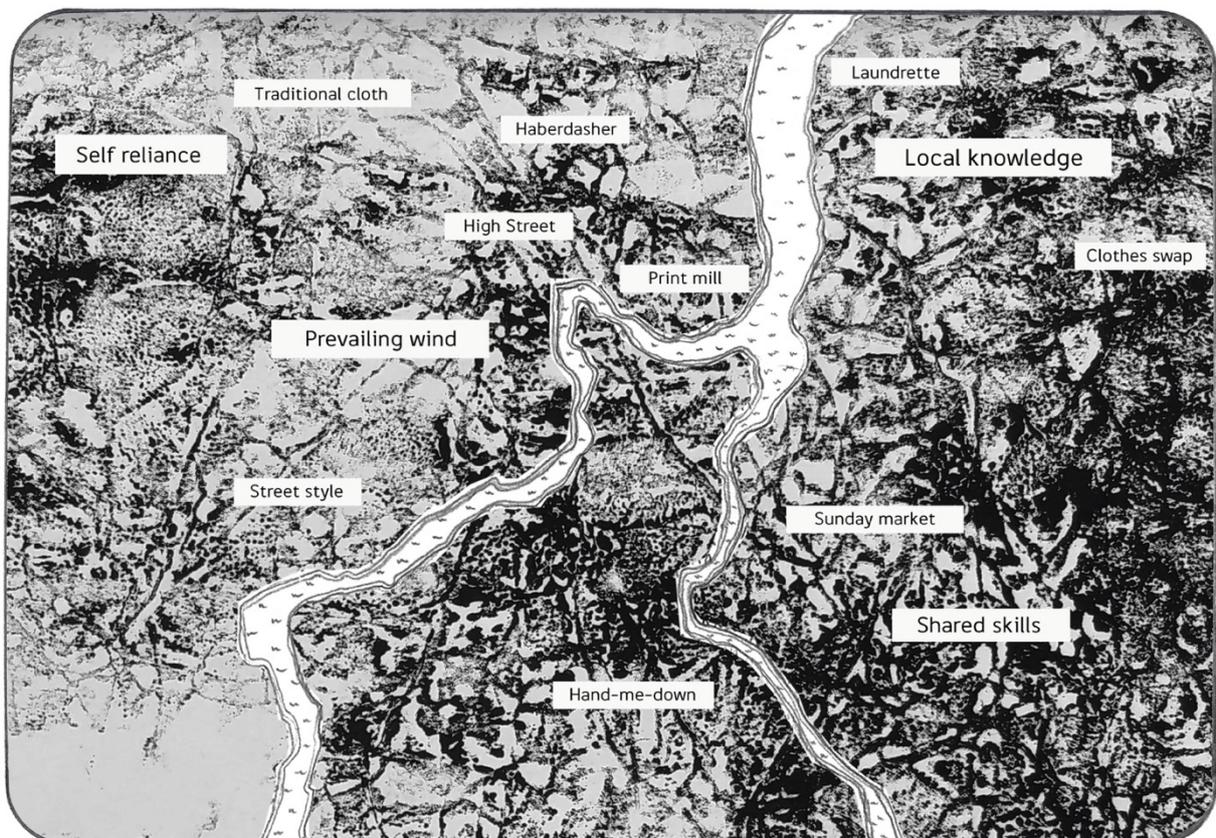


Figure 5 – A rooted sense of identity and community through localism

A flavour of the life

When I think back to before, I see that now I am so much better dressed. I am more a part of where I live. Yes this is a bit down to the fact that I am now wearing things suited to the weather here, that were designed with this place in mind, but also because I am contributing to life in this place. People around here have jobs because of my wardrobe choices. We all want clean rivers flowing through our community, so no one is dumping chemicals. We all know that the hidden system that makes the visible fashion system run – care practices, handing down of clothes, haberdasheries, launderettes – is cultivated and cherished by what we choose to do each day when we get dressed. Schools here teach repair skills. It helps all of us firstly find our problems; and secondly, to act.

Stakeholders and disciplines brought together by this landscape

Economics, social practice, community engagement, education, design.

Action research directions

Life in localism

- What are the ways in which producers and wearers of clothes can become both participants and collaborators in creating the places in which they live?
- Examine how fashion activities can sustain the places they are based in. Investigate what these activities look like or might look like, what infrastructure is needed and who is involved.
- If fashion localism is a flourishing of responsibility for fashion pieces, practices and relationships that emerges from where we are; how can understanding of places, their resources and skills be developed and the distinctiveness held without being commodified?

Drivers of localism

- Which decentralised modes of production and garment use change the balance of the economic distribution of power and address environmental issues in the fashion context?
- Consider who are agents of change in localism. And if scales of activity need to *reduce* in order to affect change, then who,

in a fashion system focused on growth and *increase*, will lead the charge?

- Explore ways in which global fashion companies and monopolies can be scaled down to the level of local.
- How can a more active and adapted fashion system emerge?

New roles for fashion stakeholders

- How can fashion stakeholders organise local work, and how does local change the repertoires of skills and knowledge needed, and how professional roles are configured?

Communicating localism

- What are the stories of local fashion?

Scope, size, place, time

Localism is necessarily place-specific in detailed application, however work to develop an understanding of how to foster and maintain diverse economies and social structures with respect to fashion is a global imperative. The goal is, in effect, to pixelate a single, 'one economy' view of fashion provision and expression, in order to create multiple, small and less environmentally impactful systems that satisfy needs for identity, creativity, protection. Much of this knowledge already exists, at least in a tacit way. Immediate action could see the formation of platforms which share knowledge and grow confidence and pride in local distinctiveness.

Where does this fit within the whole system?

Localism is recognised as a central tenet of sustainability that will, it is claimed, 'solve at root many of society's theoretical and practical problems' (Pepper, 1996: 306); it is a reorganising of power distribution, specifically citing this locally and away from global brands. Such practices may not always lead to conclusions and strategies that are easy to understand or which best represent the long term, but they are based on local empowerment and are a community's joint responsibility.

3. PLURAL: New centres for fashion

The economic growth logic is deeply intertwined with a Western hegemony, human exceptionalism, patriarchy and a focus on quantitative science. The PLURAL landscape shifts our fashion perspectives to other foci, and explores what fashion can mean, what it can be and do in a pluriverse (Escobar, 2018). This form of decolonization involves new centres for making fashion, and also new ways of thinking and doing research, such as from feminist, indigenous and nature-based perspectives (Tuhiwai Smith, 1997). Foremost it involves setting fashion free from its prominent association with consumerist ideals and also making it open to voices that are marginalised by the dominant narrative of contemporary fashion activity. Creating platforms for envisaging fashion futures with a diversity of voices is interdependent with opening up language and ways of knowing (Tham, 2015; Sardar, 1999).

What might happen if we place fashion outside the market? Instead of seeking to shoe horn sustainability goals into an uncompromising fashion sector; we would then be free to find opportunities for fashion within a changed, earth logic, context. Decentering fashion can take many forms. We can imagine fashion for hitherto unprioritised clients, and for example challenge ablebodyism, ageism, sizeism in fashion (Figure 6). We can start fashion literally from nature, creating a studio in the local park or an area of wilderness. We can grow fashion expression from the craft of use (Fletcher, 2016). We can honour fashion in non-Western geographies. We can train the focus of fashion on supporting race and gender equality. Each perspective offers new models and practices for relating with fashion as well as broadening and diversifying the base of fashion expertise. Significantly, in a decolonised landscape, a new relationship between fashion and nature and non-human species is strongly represented, essential because human-centredness is not in the interest of humans, or anyone else (Plumwood, 2013). This relationship ensures that human needs are not addressed at the expense of other life forms. Rather it is based on building emotional and experiential closeness that shows how humans and clothing is part of nature and is tied to specific places and contexts (Fletcher, 2019). Through interdependency, humility and relationship new ideas and forms of action are created (Fletcher, St. Pierre and Tham, 2019).

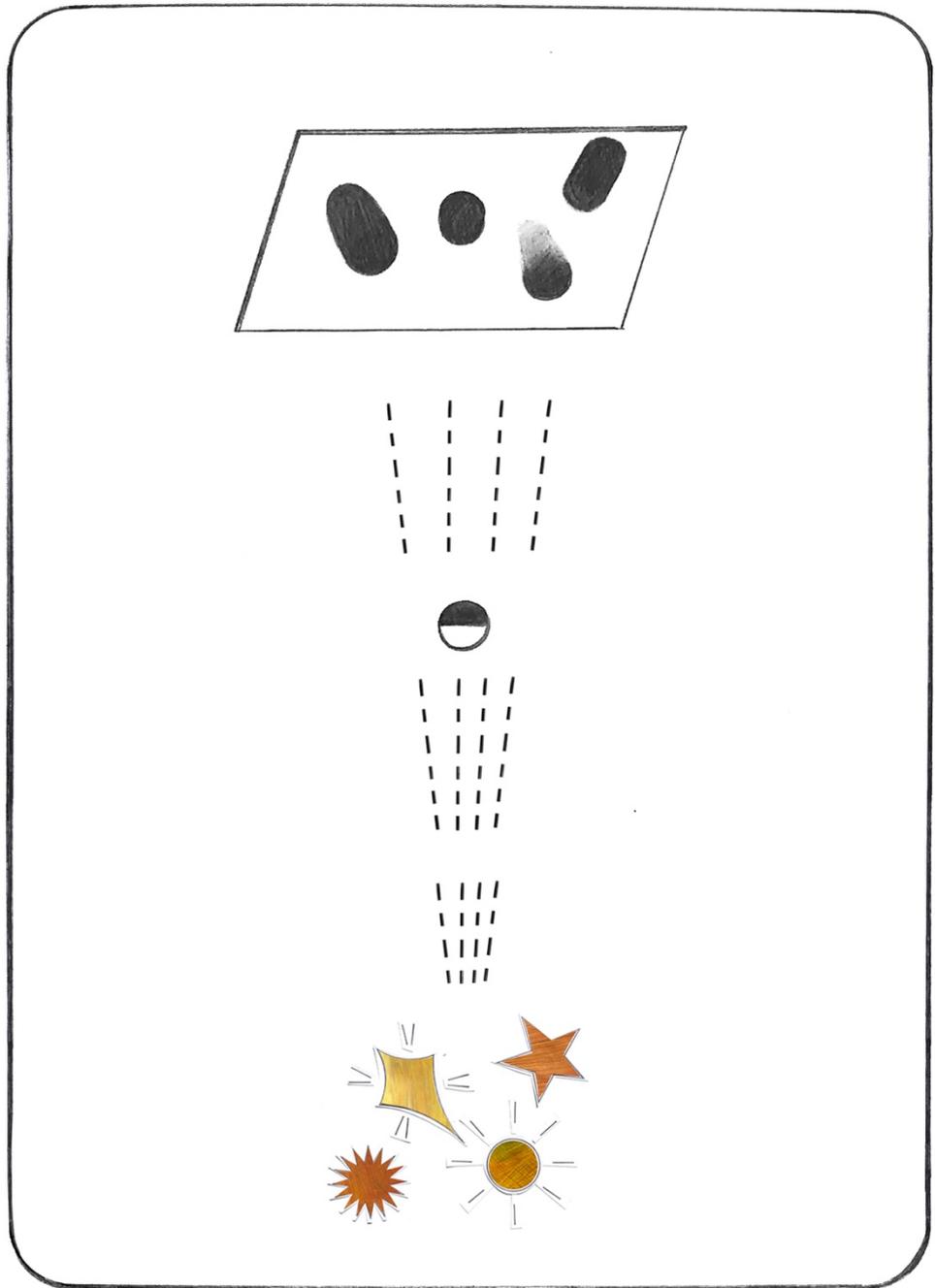


Figure 6 – Pluralism in fashion can take many forms

Genuinely giving space for a plurality of fashion voices, requires profound attention to the space we allocate to dominant voices – making this space smaller, and how we genuinely reach those not currently prioritised. This requires new models for funding bodies, education admission, recruitment to organisations etc. It also includes sincere attention to citation politics, avoiding replicating the same, dominant narrative (Ahmed, 2017). In this landscape it is especially important to remember that the fashion system as we know it today is recent and manmade. There are a pluriverse of possible fashion systems if we set fashion free.

A flavour of the life

Imagine an open fashion studio in the park, community centre, library, reading group, cooking class. The fashion studio and fashion school has been turned inside out. Instead of scouting and bringing ideas and resources from the outside to fashion and commodifying them, now fashion offers itself to communities – materials, equipment, skills are shared out. Instead of following the rigid fashion cycle and rules, the emerging fashion studios create rhythms, rituals and aesthetics according to needs and opportunities of new fashion clients – who also part of the studio. This happens through keen exploration paying attention to nuances, and carefully layering textiles with care. Suddenly fashion voices, bodies, expressions we never heard and saw stir up questions, start enterprises, form new patterns of relationships. When fashion is set free from the Western dominant cast, fashion becomes a lively, opinionated and generous place.

Stakeholders and disciplines brought together by this landscape

Cultural studies, community engagement, human geography, governance, NGOs, design.

Action research directions

Life in plurality

- Situate research within existing communities of practice outside the growth logic (such as Dorcas Clubs) and explore how values sharing and resilience can be translated to other contexts (Sinclair, 2015).

- Use norm critical and norm creative lenses (Vinthagen and Zavalia, 2014) on fashion garments, communications, events and practices. This can mean analysing how power is attributed to, for example, race, gender, ablebodyism, and reimagining the specific situation with power equally distributed. What design decisions, communications etc would it take to achieve equality?

Drivers of plurality

- Co-create models for diverse representation in organisations and how such diversity can be upheld over time together with a diverse range of stakeholders.

Communicating plurality

- Consider giving priority to non-verbal and non-visual languages in action research situations and explore emerging ways of knowing, negotiating, communicating and distributing power. For example, what happens if we let sound and touch play a more prominent role than sight, or if drawing and making are given precedence over theory?
- Consider processes of reaching out to a diversity of communities and offering diverse communities mandate and resources to define and run projects.

Scope, size, place, time

This landscape is everywhere where fashion is not focused today. It is like inverting a map and travelling the ground off the beaten track. This holds enormous potential to readdress power imbalances and to generate new ideas.

Where does this fit within the whole system?

This landscape offers imagination and vitality to the whole system, and offers pathways to engage a diversity of communities and interests.

4. LEARNING: New knowledge, skills, mindsets for fashion

Transition to an earth logic life requires learning on a massive scale. The learning concerns both professional and personal life remits. It includes practical and interpersonal skills as well as learning how to be a human in an earth logic world. A significant part of this is learning to cope with the loss of past lifestyles and world views and unlearning associated habits, ways of relating, and thinking about the world (Macy and Johnstone, 2012). Many of these are so deeply rooted in our thoughts and actions that we are unaware of them. This research landscape envisages action research concerning unlearning and learning directly related to fashion, such as how to provide for earth logic fashion, how to acquire, care for and mend clothing, how to share clothing, how to want the clothes we already have. This landscape is also about exploring how fashion, with its reach into emotional and social life remits and its ubiquitousness in daily life, can be a hub for wider learning. Such learning can sprawl from hubs situated in schools, fashion colleges, libraries, maker spaces, shops, cafés, launderettes, kitchen tables, wardrobes.

Core competencies of learning and unlearning are: confidence, creativity, community and ecological literacy. For, as evidence suggests, it is not those most interested in fashion who have the biggest impact on the environment; they have the confidence and creativity to play with fashion codes and to reuse existing fashion resources in new configurations. Rather, it is those people who are ‘a bit interested’ in fashion, and perhaps insecure or anxious of not fitting in, or feel pressured to conform to a particular look or lifestyle that have the most deleterious effect on the resource base. This group feels the need for constant new arrivals in their wardrobe to convey their fashion identity, to be ‘right’ (Fletcher and Tham, 2003). Youths who have a strong community grounding, such as by belonging to a church or a cycle club display higher resilience in the face of pressure to consume (Collins, 2015). People who are style- rather than fashion-guided in their clothing choices, display higher levels of wellbeing and less materialistic values (Gwozdz et al., 2017).

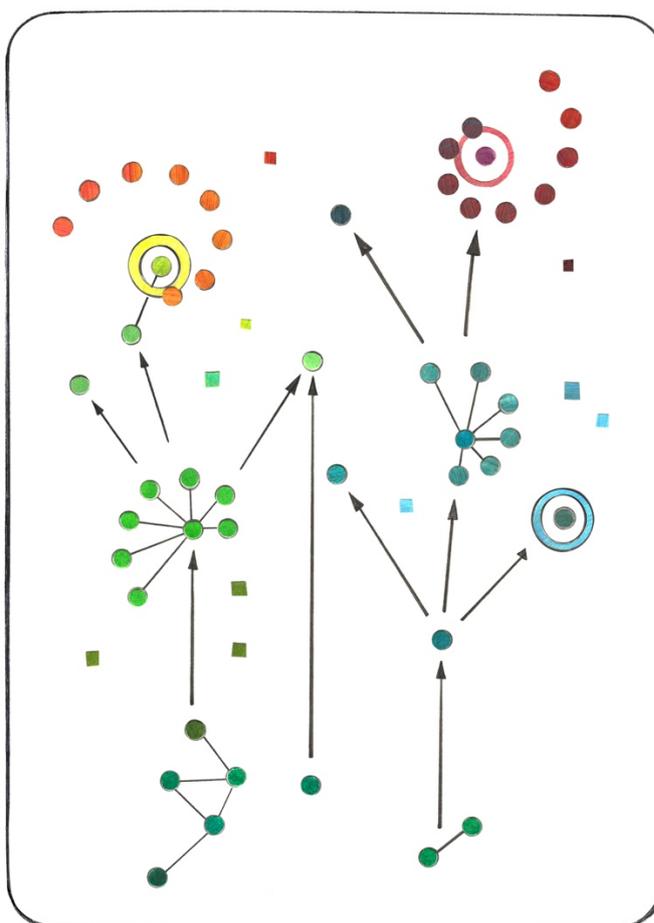


Figure 7 - Earth Logic learning is characterised by diverse learning moments and trajectories

Unlearning and learning for earth logic is highly political. It claims that each citizen has value, capability and responsibility to create sustainability. It avoids accepted roles of the learned and learner in favour of co-learning (learning together). In consideration of the necessary speed and scale of learning, Earth Logic learning is characterised by diverse learning moments and trajectories (Figure 7). Many of those with the most to share in Earth Logic terms, will have been low on a modernist, academic and growth-centric knowledge hierarchy: makers and repairers for instance, along with farmers, indigenous people, people developing smartness with resources when living on very low incomes, and non-human species. Such knowledge is gleaned through life-long learning or cradle-to-cradle learning (Tham, 2014) and is shared and generated across generations as well as across communities. A decentralised earth logic school can provide the community support for both difficult

feelings associated with change and generate practical responses which can seed agency.

A key framework for grounding this learning is that of permaculture. With its three simple guiding principles: care for Earth, care for people and fair share, it is easily applicable across civic and professional contexts (Mollison, 1988; Holmgren, 2002).

Flavour of the life

Imagine a fashion earth logic community school. Perhaps it takes place at the local library every Saturday. Being part of this kind of school has become more ubiquitous than learning to drive used to be and is lifelong. A core tenet of the fashion earth logic school is the dialogue around and hands-on explorations with identity and group belonging, which takes place while clothes are mended, altered, remade. This is of course highly relevant for teenagers, but also for the larger population, who are children or teenagers in terms of finding a new earth logical identity and community. Explorations extend into the local garden and farm, fashion being a practice ground for skills and ideas that seamlessly crossover with food growing, making and eating.

Stakeholders and disciplines brought together by this landscape

Education (schools, universities, further education), fashion practice, community engagement, information technology.

Action research directions

Sites of learning

- Explore the sites most auspicious for learning. They may draw upon specific groups, but probably have wider scope and effect if they gather intergenerational and cross-sectoral communities.

Earth logic curriculum

- Consider the shape, process and content of a basic curriculum. This could start from the permaculture principles of ‘care for earth, care for people, fair share’ based around creating immediate agency and a culture of sharing, within learning situation and outside.
- Consider how curricula in formal education, citizen learning and professional learning can be joined up.
- Create conditions for different types of information, ways of knowing and cognitive styles to come into play. This could take the form of a combination of practice, discussion, direct experience.

Drivers for learning

- Examine how emerging ideas, practices, resources can be relevant to and shared with other communities.
- Co-create feedback and evaluation loops with communities. How is the learning impacting on individuals, communities, environment? How can we steer learning to achieve more?

Scope, size and place

It is likely that agentic learning and unlearning is best structured around existing societal hubs, such as communities of interest, schools, workplaces. Some learning will be related to the local setting and interests, but basic curricula can probably be used across a range of settings, perhaps available open source. Essential is the breaking down of what is learnt into immediately doable actions for the individual and the community. Live forums and activities can be complemented with online platforms and activities.

Where does this fit within the whole system?

Unlearning and learning is central to transitioning to earth logic life with fashion and beyond. This concerns both the content of the learning – knowledge and skills, and how we learn – through collaboration and cycles of action and reflection.

5. LANGUAGE: New communication for fashion

Languaging means the co-creative relationship between communicating, thinking and doing (Tham, 2010; Wood, 2004; Maturana and Varela, 1987). The language we use shapes our thoughts and actions. Communication makes these thoughts and actions visible, thinkable, doable and talk-aboutable. An example is the term *genocide*, which when coined by the lawyer Rafael Lemkin after WWII, made it possible for the first time to prosecute atrocities committed to populations as a whole. A single word enabled a changed course of action. This research landscape explores language as an agential force in earth logic fashion.

Language is intrinsic in configurations and narratives of our world, such as the paradigm shift from economic to earth logic. It can intervene directly in our systems at the level of paradigms and foster change through drawing attention, criticality and creativity to the language we use in relation with fashion. Ubiquitous language used in fashion, such as the pairing of the terms ‘production’ and ‘consumption’ as polar opposites, create arbitrary and problematic separation between practices which are more fluid. Moreover it positions consumers as passive victims in a system they cannot understand (Tham, 2010).

The origins of the term ‘consumption’ are found in the act of wasting, of destroying by its use. In contrast, words such as growing, nurturing and caring imply very different relationships, including with fashion (Tham, 2010; 2016). This landscape is concerned with purposive naming and the paying of attention to critical and creative expression to expand earth logic practices, thinking and imagination by naming that which we wish to cultivate. It is also concerned with promoting precise and consistent use of language as the foundation of robust practice; honest appraisal of existing situations; and avoidance of greenwash. The language landscape seeks to broaden the range of expression around sustainability to include artistic expression and so open doors to engagement including those with different cognitive styles and interests. Sustainability communication in fashion has been dominated by technical, quantitative language and management terminology spawned out of scientific reductionism. What would happen to fashion if this was replaced by the language and practices of relationship and care? If sustainability was mediated in new ways? If new genres of

mediation were explored: the sitcom, the thriller, the romcom, the cartoon, the reality TV show, the fitness regime, the hip hop track?

Fashion needs more tangible visions of earth logic life, of care for earth and people and fair share enacted in a (former shopping centre), high street. What stories can we tell with different audiences? How can we transform the ethics of languaging and mediation of sustainability in fashion and beyond? How can journalists, PR agents, photographers, bloggers, model agencies be invited into earth logic learning to avoid commodification of sustainability, greenwash, and promotion of unsustainability? How can we use processes of creating language of fashion to create agency? (Figure 8) This requires a new culture of language of sustainability which transcends knowledge hierarchies (between disciplines, theory and practices etc). It draws on nonviolent communication (Rosenberg, 2015) and focuses interaction on deep understanding, respect and collaboration.

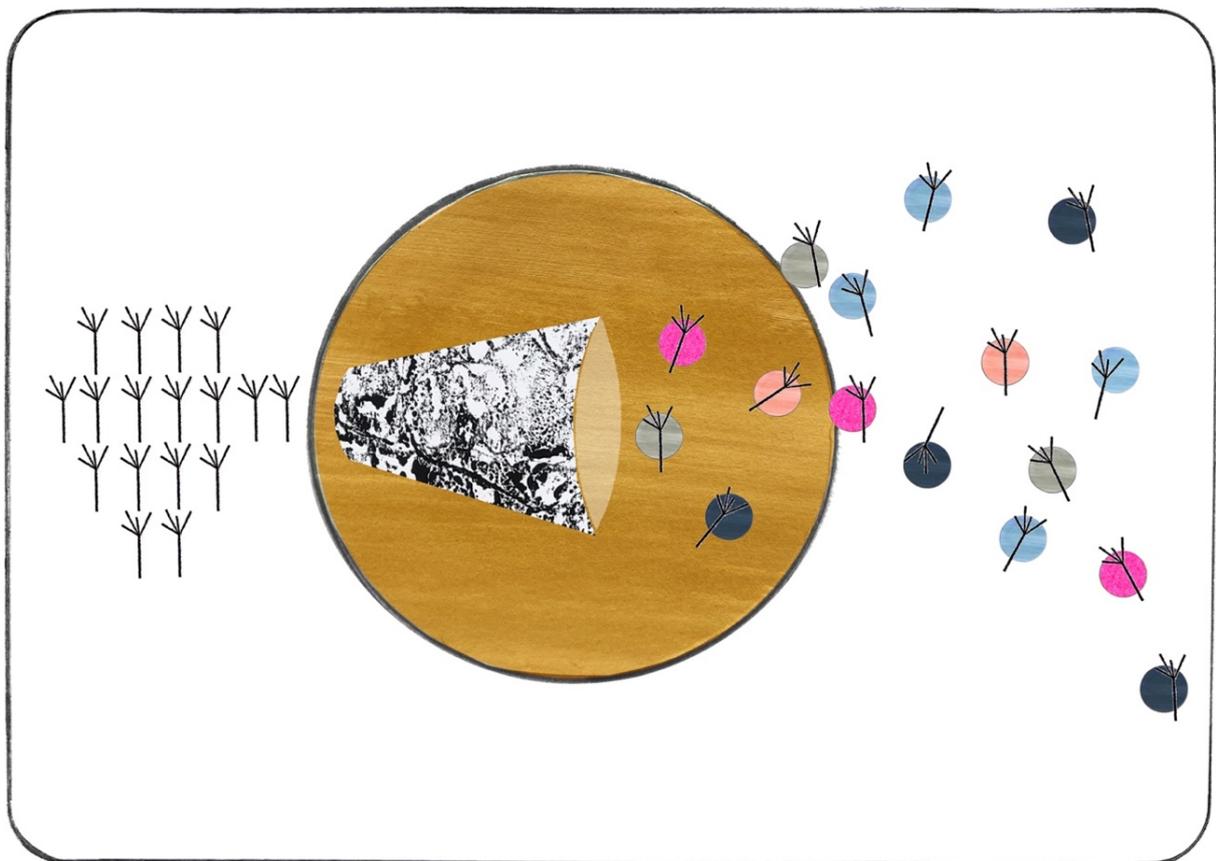


Figure 8 — Processes of creating language of fashion to create agency

Flavour of the life

Imagine a vocabulary without consumption. Instead we would use a diversity of words to define a diversity of practices – nurturing, stewarding, growing, mending, borrowing, relating, sharing. Imagine a dictionary without the word waste, because it was no longer relevant. Imagine watching a news report that helped you see and feel the connection between global frameworks, such as the Sustainable Development Goals and your local fashion practice. Imagine when the words for being with fashion, are as rich and nuanced and scented as the plants of a wild meadow.

Stakeholders and disciplines brought together by this landscape

All arts, infographics, journalism in collaboration with natural and social science, psychology and education.

Action research directions

New professional roles and skills

- Explore the role of a languaging ombudsperson in all organisations, to support, disseminate, evaluate earth logic language.
- Create curriculum for professional communicators on earth logic language, the ethics of care for earth, care for people, fair share and nonviolent communication. (See: Alderslowe et al, 2018; Rosenberg, 2015)

Sites of languaging

- Consider the ways in which museums, libraries, cinemas, schools, catwalk shows can be engaged in languaging earth logic life.
- Facilitate with distinct communities, (e.g. teenagers), to create earth logic communication.
- Work with transdisciplinary communities to create glossaries for fashion that emerge from place.

Developing new language

- Use processes of creating language to critique unsustainable practices and strategies and create earth logic alternatives with transdisciplinary groups.
- Explore language specifically for inviting people and communities new to sustainability in engaging ways.

- Collaborate with news organisations to create new genres, and build on existing ones to create engaging sustainability communication (see, for example Mediaborgarna, arts based news communication as model for emotive and experiential communication
<https://theyooying.com/user/6939283803/mediaborgarna>).

Scope, size and place

The process of developing new language needs to take place at levels of communities, organisations and nation/globe simultaneously. It is important the multinational companies become accountable for the use of the terms they use. It is equally important to have language that stretches our individual and collective imagination, and language that *genuinely* invites and is accessible to all (new)comers to sustainability.

Where does this fit within the whole system?

Languaging can intervene directly at the level of mindsets and paradigms. Therefore, attention to language will be part of any action research fashion project.

6. GOVERNANCE: New ways of organising fashion

This landscape attends to how the system of fashion can be organised and governed to best respond to critical challenges, such as climate change. While fashion industry representatives and policy makers have been alert to environmental and social challenges since the early 1990s, attention to governance structures and decision-making processes, a fundament for achieving change, has been missing.

A changed approach to governance necessitates the creating of systems that nurture earth logic fashion. Fashion practices span the world, creating livelihoods and deepening culture in diverse ways including through engagement with multiple actors, including humans and other species. The industry format for creating fashion is, relatively speaking, a new phenomenon in a long history in which fashion has been, and still is, produced by small communities, closely linked to learning and sharing skills, resourcing the community and living with nature. More diverse, less authoritarian systems can achieve a greater flexibility and nimbleness in responses to crises (Ostrom, 1999) (Figure 9), they can better represent their communities. Diversity, modularity and overlapping functions characterise thriving ecosystems and also create conditions for human made systems to be resilient (Walker and Salt, 2006). Peace and reconciliation studies emphasise the role of middle range leaders, with connections to both top and grass roots, in successful reconciliation (Tham, 2015; Lederach, 1997). While decentralised governance can be perceived as messy, it allows organisations to quickly adapt when conditions change (Pisano, 2012). It places a greater diversity of stakeholders at decision-making tables. It democratises the practices of fashion provision and expression as well as diffuse holding of power in global and local networks.

Earth logic fashion builds processes and decision making which places caring relationships at its centre, for earth, for people, for fair share. Prioritising caring relationships creates a virtuous cycle of closer relationships, responsibility, empowerment and agency (Tham, op cit; and 2019). A new governance model views the fashion system as a web of relationships rather than a nexus of business contracts, arrangements and economic priorities. This is not to deny that contracts exist, but that these are not limited to financial obligation, and rather that there are many different relationships within which there is an obligation of care (Machold et al., 2008).

The obligation of care also extends to the future. Earth logic fashion formalises the development of mechanisms and devices of commitment that provide guidance about the right choices to make (Offer, 2006). Strategies of commitment aid us in foregoing things now for the sake of something better later; they help us relinquish the immediate demands of isolated individuals in order to benefit long-term, shared societal objectives. Earth logic fashion demands the introduction of governance processes that evolve commitment strategies equal to the challenge of our times; that lay down webs of connections and moments of understanding based on different types of fashion experience.

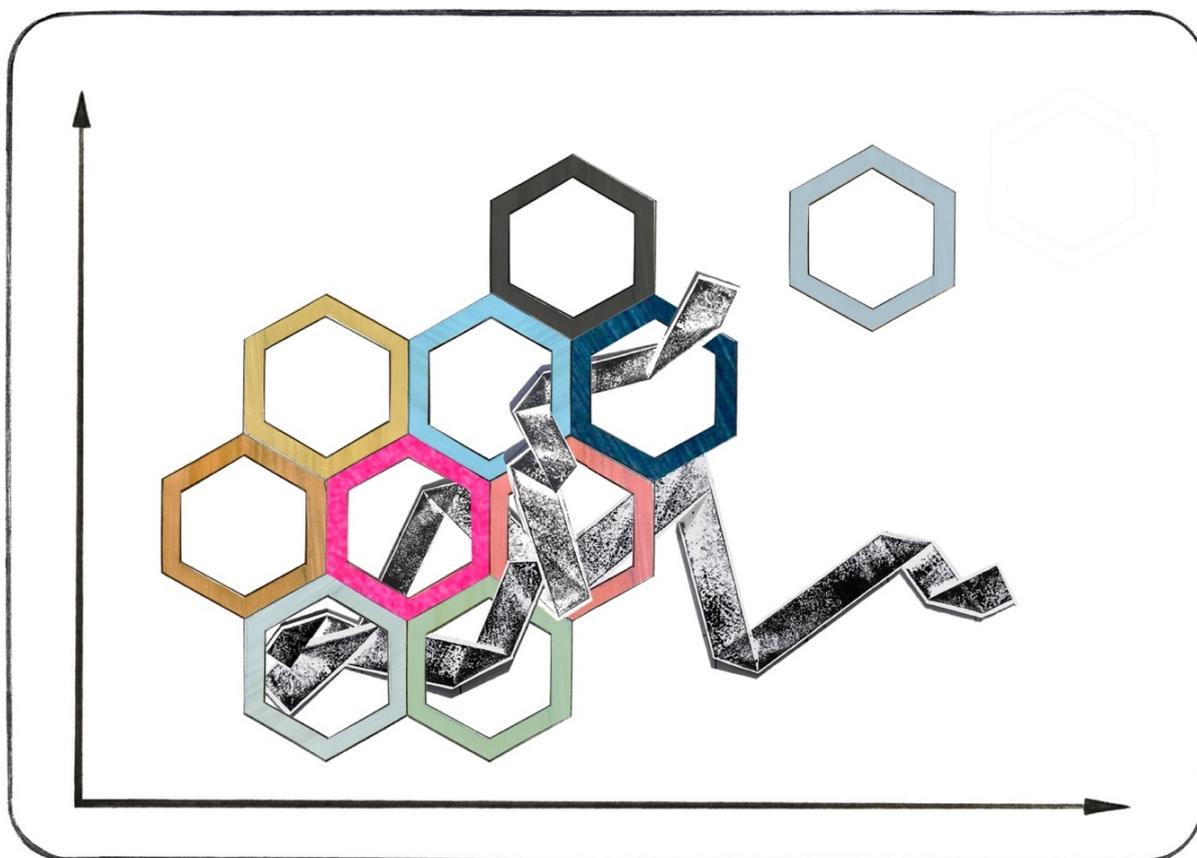


Figure 9 - More diverse, less authoritarian systems of governance

Flavour of the life

Care and quality of relationships in the fashion system means simultaneous processes of scaling up and down. Imagine the former global fashion monopoly reorganised to correspond to local stakeholders' needs and interests. Establishing local governance allowed it to respond to the specific needs and opportunities of place, and to build on existing local caring relationships. This meant that the company ceased selling garments in some places, instead providing fashion services – rental, styling, skilling, sharing. In other places, garment sales were still relevant, but production could be organised and conducted locally. The thread between local municipalities, other businesses, schools and organisations became stronger. It became possible to organise resources across activities, and to learn and share knowledge.

Stakeholders and disciplines brought together by this landscape

Organisation and management, systems and resilience thinking, industry, peace and reconciliation, labour organisations, governance, NGOs.

Action research directions

Governing earth logic life

- Develop micro case studies of individuals and communities letting each everyday decision be guided by earth logic.

Communicating governance

- Consider how decision making can become transparent and power explicit. Map decision making together with diverse stakeholders and chart formal and informal decision making, who makes decisions, on what basis and with which mandate. Note which stakeholders are absent or silent. Campaign for transparent power and decision making disclosure of all organisations.

Redistributing power

- Explore ways to fast track new voices in fashion governance.
- Create training and mentorship programmes to fast track minority voices in fashion.
- Campaign for representation of genuine diversity on all decision-making groups in fashion and obligatory training in

norm criticality, intersectionality for all members of such groups.

Tools for earth logic governance

- Create protocols for what constitutes genuine diversity, including viewpoints of ideology, values, scale and imagination.
- Create easily accessible materials on how power and decision making works, and what the ways of intervening and affecting change can be – for different stakeholders.
- Develop new indexes for fashion, based on the health of relationships.

Where does this fit within the whole system?

Governance is core to carrying through earth logic fashion. Governance needs to be at the service of planet instead of economic growth. The importance of governance based on care recurs at all scales, from the local shop, to the global fashion company. Earth logic governance is an essential part of learning and unlearning.

References

- AFIRM (2014). "Selecting Dyes and Chemicals to Minimise Environmental Impacts" Bluesign Presentation at AFIRM RSL Seminar, Shanghai International Convention Centre, Shanghai, China, 27 September 2007, [online] URL: <http://www.afirm-group.com/presentations/2007/Bluesign%20Presentation%201.pdf> (accessed 5 July, 2019).
- Ahmed, S. (2017). *Living a Feminist Life*. Durham and London: Duke University Press.
- Alderslowe, L., Amus, G., Devapriya, D.A. (2018). *Earth Care, People Care and Fair Share in Education: The children in permaculture manual*. Children in Permaculture.
- Allwood, J. H., Gutowski, T. G., Cabrera Serrenho, A., Skelton, A. C. H, & Worrell, E. (2017). Industry 1.61803: the transition to an industry with reduced material demand fit for a low carbon future, Special Issue on Material demand reduction, *Philosophical Transactions of the Royal Society A*, 375 (2019), <https://doi.org/10.1098/rsta.2016.0361>
- Allwood, J. M., Laursen, S. E., Malvido de Rodriguez, C. and Bocken, N. M. P. (2006). *Well Dressed?*, Cambridge: University of Cambridge Institute of Manufacturing.
- Braidotti, R. (2006). *On Nomadic Ethics*. Cambridge: Polity.
- Chapman, A. (2010). *Mistra Future Fashion – Review of Life Cycle Assessments of Clothing*. Stockholm: Oakdene Hollins for Mistra. [Online] URL: http://www.oakdenehollins.co.uk/media/232/2010_mistra_review_of_life_cycle_assessments_of_clothing.pdf (Accessed 31 January, 2014).
- Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. *University of Chicago Legal Forum*: Vol. 1989, Article 8. Available at: <https://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8>.

- Crutzen P.J. (2006). The “Anthropocene”. In: Ehlers E., Krafft T. (eds) *Earth System Science in the Anthropocene*. Heidelberg: Springer.
- Curtis, F. (2003). Eco-localism and sustainability, *Ecological Economics*, 20(1), 83–102.
- D’Alisa, G., Demaria, F. and Kallis, G. (2015). *Degrowth: A vocabulary for a new era*. Routledge: London.
- Davison, A. (2017). ‘Not to escape the world but to join it’: responding to climate change with imagination not fantasy, Special Issue on Material demand reduction, *Philosophical Transactions of the Royal Society A*, 375 (2095), <https://doi.org/10.1098/rsta.2016.0365>.
- Ehrenfeld, J. A. (2008). *Sustainability by Design*, New Haven: Yale University Press.
- Ehrlich, P. and Ehrlich, A. (1990). *The Population Explosion*. Hutchinson, London.
- Escobar, A. (2018). *Designs for the Pluriverse*. Durham and London: Duke University Press.
- Euromonitor (2017). *Euromonitor statistics*. [Online] URL: <http://www.portal.euromonitor.com.rps.hva.nl:2048/portal/magazine/home-main> (accessed 5 July 2019).
- Fleming, D. (2011). *Lean Logic: a dictionary for the future and how to survive it*, London: The Estate of David Fleming.
- Fletcher, K. (2014 [2008]). *Sustainable Fashion and Textiles: Design Journeys*. London: Earthscan.
- Fletcher, K. (2016). *Craft of Use: Post-Growth Fashion*, London: Routledge.
- Fletcher, K. (2018). The Fashion Land Ethic: Localism, Clothing Activity, and Macclesfield, *Fashion Practice*, Volume 10, Issue 2, 139–159. DOI: 10.1080/17569370.2018.1458495
- Fletcher, K. (2019). *Wild Dress: Clothing & the Natural World*, Axminster: Uniform Books.
- Fletcher, K., St. Pierre, L. and Tham, M. (2019). *Design and Nature: A Partnership*, London: Earthscan.
- Fletcher, K. and Tham, M. (2003). Clothing Rhythms in E. van Hinte (ed.), *Eternally Yours: Time in Design*. Rotterdam: 010 Publishers, pp254–274.
- Fletcher, K. and Tham, M. (Eds) (2015). *Routledge Handbook of Sustainability and Fashion*. Abingdon, Oxon: Routledge.
- Global Fashion Agenda and Boston Consulting Group. (2017). *Pulse of the Fashion Industry*. Global Fashion Agenda & The Boston Consulting Group. [online] URL: <https://globalfashionagenda.com/wp->

- content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf (Accessed 12 July 2019).
- Gwozdz, W., Steensen Nielsen, K., Gupta, S., Gentry, J. (2017). The relationship between fashion and style orientation and well-being. *Mistra Future Fashion*, Report number 2017:5. [online] URL: <http://mistrafuturefashion.com/wp-content/uploads/2017/11/D3.style-versus-fashion-and-wellbeing.pdf> (Accessed 12 July 2019).
- Haraway, D.J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene* (1st ed.). Durham, NC: Duke University Press Books.
- Harrabin, R. (2019). Climate change: Big lifestyle changes ‘needed to cut emissions’, *BBC Online* 29/08/2019 [online] URL: <https://www.bbc.co.uk/news/science-environment-49499521> (Accessed 29 August 2019).
- Heron, J. and Reason. P. (2001). *The Practice of Co-operative Inquiry: Research with rather than on people* in Reason, P & Bradbury, H (eds). *Handbook of Action Research: Participative Inquiry and Practice*. Sage Publications: London.
- Holmgren, D. (2002). *Permaculture: Principles & pathways beyond sustainability*. Hampshire, UK: Permanent Publications.
- IPCC (2018). *Global warming of 1.5C*, Switzerland: IPCC.
- Jones, H., and Lundebye, A., (2012). ‘Metadesign: A Dynamic Framework for Seeding Socially Responsive Design’. Out of Control, the *8th International Conference on Design and Emotion*. Central Saint Martins School of Art and Design, UK. 11th – 14th September 2012
- Kallis, G. (2017). Radical dematerialization and degrowth, Special Issue on Material demand reduction, *Philosophical Transactions of the Royal Society A*, 375 (2095), <https://doi.org/10.1098/rsta.2016.0383>
- Kant, R. (2012). Textile dyeing industry an environmental hazard. *Natural science*, 4(1), 22-26, [online] URL: <http://dx.doi.org/10.4236/ns.2012.41004> (accessed 5 July 2019).
- Kondo, M. (2017). *The Life-Changing Magic of Tidying Up: a magical story*. New York: Ten Speed Press.
- Kuhn, T. (1962). *The Structure of Scientific Revolution*. Chicago: University of Chicago Press, Chicago.
- Lederach, J. P. (1997). *Building Peace: Sustainable reconciliation in divided societies*. Washington: United States Institute of Peace.
- Lehmann, M., Arici, G., Boger, S., Martinez-Pardo, C., Krueger, F., Schneider, M., Carrière-Pradal, B., Schou, D. (2019). *Pulse of the Fashion Industry 2019 Update*. Global Fashion Agenda, The

- Boston Consulting Group, Sustainable Apparel Coalition.
[online] URL:
https://csr.dk/sites/default/files/Pulse_of_the_Fashion_Industry_2019_Update.pdf (accessed 12 July 2019).
- Ellen MacArthur Foundation. (2017). *A New Textiles Economy: Redesigning fashion's future*. [online] URL:
www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf
(accessed: 5 July 2019).
- Machold, S., Ahmed, P. K. and Farquhar, S. S. (2008). Corporate Governance and Ethics: A Feminist Perspective, *Journal of Business Ethics*, 81:665–678, DOI 10.1007/s10551-007-9539-5.
- Macy, J. and Johnstone, C. (2012). *Active Hope: How to Face the Mess We're In Without Going Crazy*. Novato, C.A.: New World Library.
- Maturana, H. and Varela, F. J. (1987). *The Tree of Knowledge: The biological roots of human understanding*. Boston: New Science Library.
- Meadows, D.H. (1997). *Leverage Points: Places to Intervene in a System*. [online] URL:
www.sustainabilityinstitute.org/pubs/Leverage_Points.pdf
(accessed: 5 July 2019).
- Mistra Future Fashion. (2019). Research for systemic change in fashion via closed loops and changed mindsets. *Mistra Future Fashion* [online] URL: <http://mistrafuturefashion.com>.
(accessed: 15 July 2019).
- Mollison, B. (1988). *Permaculture: A designer's manual*. Tasmania, Australia: Tagari Publications.
- Offer, A. (2006). *The Challenge of Affluence*, Oxford: Oxford University Press.
- Ostrom, E. (1999). "Coping with the tragedies of the commons." *Annual Review of Political Science*, 2:493–535.
- Pepper, D. (1996). *Modern Environmentalism*, London: Routledge.
- Pisano, U. (2012). Resilience and Sustainable Development: Theory of Resilience, Systems Thinking and Adaptive Governance. *ESDN Quarterly Report N26*. Vienna: European Sustainable Development Network. September 2012. [Online] URL:
www.sdnetwork.eu/quarterly%20reports/report%20files/pdf/2012-September-Resilience_and_Sustainable_Development.pdf
(accessed June 4 2014)

- Plumwood, V. (2013), Nature in the Active Voice in G. Harvey (Ed), *The Handbook of Contemporary Animism*, Durham: Acumen Publishing Ltd., 441–53.
- Puig de la Bellacasa, M. (2017). *Matters of Care: Speculative Ethics in More than Human Worlds* (3rd ed.). Minneapolis, MN: University of Minnesota Press.
- Rockström, J. et.al. (2009). Planetary Boundaries: exploring the safe operating space for humanity. *Ecology and Society* 14(2): 32. [online] URL: <http://www.ecologyandsociety.org/voll4/iss2/art32/> [accessed 15 July 2019]
- Rosenberg, M. (2015). *Nonviolent Communication - A Language of Life*. Encinitas: CA: Puddledancer Press.
- Sardar, Z. Ed. (1999). *Rescuing All Our Futures*, Twickenham: Adamantine Press.
- Smithers, R. (2019), Fast fashion: Britons to buy 50m ‘throwaway outfits’ this summer, *The Guardian*, 11 July 2019 [Online] URL: <https://www.theguardian.com/fashion/2019/jul/11/fast-fashion-britons-to-buy-50m-throwaway-outfits-this-summer>
- Siegle, L. (2011). *To Die For: Is Fashion Wearing Out the World?* London: Fourth Estate.
- Sinclair, R. (2015). Dorcas legacies, Dorcas futures: Textile legacies and the formation of identities in ‘habitus’ spaces. *Craft Research*, Volume 6, Number 2, 1 September 2015, pp. 209–222(14).
- Tham, M. (2010). Languaging fashion and sustainability : towards synergistic modes of thinking, wording, visualising and doing fashion and sustainability. *Nordic Textile Journal*. 3. 14–23.
- Tham, M. (2014). Off-centre - a call for humble lessons for design. How can metadesign perspectives support education for design for sustainability?, *Proceedings of Cumulus Johannesburg, Design with the Other 90%*, pp 329–335. [Online] URL: www.cumulusjohannesburg.co.za/files/9014/1810/6622/CumulusJoburgProceedings_Sep14.pdf
- Tham, M. (2015). The futures of futures studies in fashion in K. Fletcher and M. Tham (eds), *Routledge Handbook of Sustainability and Fashion*. Abingdon, Oxon: Routledge.
- Tham, M. (2019). Equality in V. Tassinari and E. Staszowski (eds.) *Designing in Dark Times*. New York: Bloomsbury.
- Tronto, J. C. (1993). *Moral boundaries: a political argument for an ethic of care*. New York: Routledge.
- Tuhiwai Smith, L. (1999). *Decolonizing Methodologies. Research and Indigenous People*, London/New York: Zed Books.

- UN (Undated). Goal 12: Ensure sustainable consumption and production patterns. *United Nations* [online] URL: www.un.org/sustainabledevelopment/sustainable-consumption-production/ (accessed: 12 July, 2019).
- Vinthagen, R. and Zavalía, L. (2014). *Normkreativ*. Stockholm: Premiss.
- Walker, B and Salt, D. (2006). *Resilience Thinking: Sustaining Ecosystems and People in a Changing World*. London: Island Press.
- Weizsäcker, von E., Lovins, A. B. and Lovins, L. H. (1997). *Factor four: doubling wealth–halving resource use*, London: Earthscan.
- Wilson, E. (2003) *Adorned in Dreams: Fashion and Modernity*. London, New York: I.B. Tauris.
- Wood, J. (2004). Clocks with Awareness; Enhancing the Quality of Time, Vol. 16, 2004, *International Journal of Computing Anticipatory Systems*, ed. Daniel M. Dubois, Centre for Hyperincursion and Anticipation in Ordered Systems Publications, Liege, Belgium (Proceedings of the Computing Anticipatory Systems Conference, Liège, August 11-16, 2003, 315-325.)
- Wood, J. (2010), “Co-designing Team Synergies within Metadesign”, paper given at the “Young Creators for a Better City and a Better Life” conference, Shanghai, *CUMULUS conference*, September 8th, 2010.
- WRAP. (2017). *Valuing Our Clothes: the cost of UK fashion*. [Online] URL: www.wrap.org.uk/sites/files/wrap/valuing-our-clothes-the-cost-of-uk-fashion_WRAP.pdf (Accessed: 12 July, 2019).