

# CIRCULAR TRANSITIONS

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## Circular Speeds: towards a new understanding of designing for fashion textile rhythms

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### Abstract

During the first phase of the Mistra Future Fashion project researchers, from the University of the Arts London, identified a gap in knowledge. Although ‘lifecycle thinking’ had become a widely adopted and tested approach in academic and industry contexts, the dimension of ‘time’ or ‘speed’ was not fully resolved as a factor within existing guidelines for design. Thus ‘circular speed’ became the focus of the research as it moved into the second four-year phase of the project (2015–2019). This paper represents the results of an academic review of the literature conducted during 2015–2016 in order to better understand the challenges this may bring to design and to prepare for an action research phase, including workshops held with participants in the UK, Sweden and USA, as well as the development of design research prototypes.

### Introduction

Design and production has changed to meet the need for speed, growing populations and the cultivated fast fashion appetite. Conversely, the idea of designing durable and long-lasting fashion textiles has been a part of the fashion industry from the outset – long before product obsolescence had been dreamt up in the 1950’s, yet the idea of slow fashion has been promoted in recent years as a new counter approach to fast fashion.

In this paper the authors propose another way of viewing the speed of fashion products by building on the ground-breaking work of Fletcher & Tham around rhythms (2004), drawing insights from their practice-based work during Mistra Future Fashion phase one (2011-2015).

Carl Honoré’s ‘In Praise of Slow’ (2004) proposed that we seek balance – the right speed – and that we question the notion that faster is always better. Rather than pursue this polarised approach to viewing ‘speed of use’, the authors here argue that a more nuanced method of analysing

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speed is needed which acknowledges the entire lifecycle of a product. We should in fact be considering the right speed for each garment within specific lifecycle stages. We need tools to help designers with this.

In this paper the authors set the scene for Mistra Future Fashion phase two research. The intention is to develop the discourse on from simply fast and slow, to a level where multiple and proportionate speeds can be both understood, tested via LCA and ultimately engineered, to improve the circular efficiency of a product. The idea presented here is that we consider both long-life (slow) and short-life (fast) as models for clothing to suit a broad range of user contexts - different needs, tastes, incomes and styles.

The results from this research will feed into the ongoing research programme, which will publish design guidelines for the circular fashion industry in 2018.

### Fashion & Circularity

The concept of 'fashion and circularity' has come into prominence as a result of the sustainability discourse and its critical relationship to fashion. Historically, the study of fashion did little to identify the economic, social and environmental implications of production, as outlined by Barthes (1999). For the modern designer, theories from many disciplines provide insight into the current problems in the fashion system and point towards directions for strategic reform. Without a comprehensive overview of factors contributing to their knowledge, designers obviously have difficulty in trying to identify a sustainable course of action within any specific context. It is essential that definitions of sustainability need to be continually revised for effective action, to achieve system based, long term, ethical design (Madge 1997; Fry 2008; Tonkinwise 2015).

The 20th century was characterised by an expanding materials economy for the most industrialised societies. Governments have been enthusiastic in their support of scientific research and technical production, while the resulting physical impacts on the environment have been slower to be acknowledged. Kuchler & Drazin (2015) assert that, although the environmental damage associated with production is now universally recognised, the potential social consequences of new materials, especially composites, are less discussed and therefore not fully understood. In the C21<sup>st</sup> climate of uncertainty, designers are trying to develop sustainability strategies in 'best design practice' for diverse global manufacture, where the nature of the material

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itself and its characteristics are key to design development. In materials science, the selection of a material for manufacture from its performance in tests, is less concerned with the selection of the ‘right’ material than an avoidance of the ‘wrong’ material (Ashby & Johnson 2009).

Integral to the development of good design practices are the current ideas from relevant disciplines: anthropology, business studies, materials science, behavioural economics, design studies, histories of dress and theories of sustainability. This multi-disciplinary integration is at the very heart of the Mistra Future Fashion project. Systemic solutions, the goal of the project, cannot be nurtured and developed in academic silos and so research is being developed in four discipline-crossing themes in order to promote a truly collaborative process.

### The Role of Design

#### *A creative and collaborative methodology*

In 1986, Appadurai described the social role of artists as critical as ‘they are thinking about new ways to arrange things’. He commends their ability to imagine new possibilities and form alliances with other disciplines, which can have practical applications. To benefit social progress, the imagination of artists and designers needs to be connected to innovation in science and technology. In an interview, Tonkinwise (2015) pointed out that the job of design is not confined to “the creation of artifacts, whether communications, products, or environments. But the practice of design is actually about persuading a wide range of actors – fellow designers, suppliers, investors, logistics managers, users in households, workplaces or public spaces, etc. – to work together on materializing a future in which such an artifact exists.”

Design can play a pivotal role in improving performance at every stage of the socio-material lifecycle. By working in communities of practice designers can identify both the physical and psychological barriers to more sustainable solutions, translating them into creative proposals for transformation.

The overwhelming complexity and lack of transparency of environmental problems can be discouraging. But designers have an ability to apply systems thinking, in a creative method that Ackoff (2006) terms ‘problem dissolving’, which shifts the problem into a new context. Designers can then construct new approaches based on reflection, logic and the generation of creative, speculative ideas. To do this, the poetic and lateral-thinking outcomes of the design process are best achieved in collaborative

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communities of practice. In order to be influential to innovation on a large scale, design outcomes need to be pre-emptive rather than reactive and locate physical products as part of material and immaterial systems.

In Mistra Future Fashion we are seeking to relate these material (in the broadest sense) choices appropriately to a specific lifecycle context. All garment journeys are not the same and all users are not uniform in their behavior and wardrobe curation. Each fashion consumer will have a complex and varied collection of garments in their care and this variety and complexity is difficult to pin down.

### *Circular Design through the Prototype*

Designers are intrinsically connected to materials in proposing their transformation into objects, which have both meaning and practical application. However, a 21st century understanding of the expenditure of energy, water and valuable material commodities to make artefacts, is also leading us to seek 'immaterial' extensions of objects in use, as propositions to lighten the material load. A way forward for the fashion designer is to study the preferences and behaviour of a particular social group. Understanding their aspirations and the triggers to purchases can enable designers to propose desirable models for an improved fashion system. To achieve sustainability and circularity through design, an understanding of impacts through all stages of the life-cycle must be understood in order to tackle the reduction of damage resulting from existing practices. A product can be redesigned to improve its overall performance, by understanding its context in this lifecycle system. 'Re-directive practice' results in what Fry describes as design 're-coding': 'the exposure of the unsustainable and the declaration of means of sustainment' (2009). When this is embodied in a prototype, the reflective 'conversation' takes place in a series of project revisions. As a result of surprise realisations or 'backtalk' from the prototype, the designer can test, redesign and collaborate with other disciplines and ultimately, with the consumer, who can become part of the prototype community (Winograd 1996).

In the proposed project we are using the prototype alongside multi-disciplinary collaboration in order to question and find insight on these circular models. First to expose the unsustainable elements in order to then design them out of the system.

But how can designers know that they are not simply sustaining the unsustainable, in working towards reduced impacts? Perhaps they cannot. Popper summarized the dilemma: "It is important that we realise just how

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little we know about these unforeseeable consequences of our actions. The best means available to us is still trial and error: trials that are often dangerous and even more dangerous errors.... What remains is the problem of selecting among our tentative solutions, ‘our guesses’ according to a method that is open to us.” (1984:4-28). Designers can only integrate the components they believe are necessary for sustainability, while making key trade-offs in search of better design solutions. The ‘re-direction’ of generic design observed in all individual and social activity, is best complemented and reinforced by a systems approach in ‘transition design’ (Irwin, Tonkinwise and Kossoff 2015).

However, as design researchers, we are mitigating this uncertainty through developing relationships between the hard and soft elements of the research. By working closely with both science and industry partners on the project we aim to reveal deeper insight and map metrics into the design process (Goldsworthy, 2016; Earley, 2016). Further work with stakeholder groups and a programme of designers-in residence (both with science and industry partners) will expand and evolve the understanding of issues.

### Multiple Fashion Speeds

In Textile Toolbox (2014) we explored design for circularity in ten prototype concepts and in the analysis of the concepts a striking polarity in approaches to product longevity (or speeds) became apparent. In the current research we are seeking to dissolve these seemingly opposite approaches and find a more related and systemic framework.

Technological change, accelerated in the 20th century, has resulted in a new acceptance of speed in society and economics. Anne Thorpe (2010) suggested that sustainability does not have any place in a modern world if it is dominated by fast thinking, as it does not allow for a variety of approaches. But designers have a particular range of skills that enables to work with fast or slow knowledge, which can serve as a bridge between the two. To arrive at a position equivalent to ecosystem resilience in the design of materials, the speed of lifecycles is critical. In nature, ‘small and fast’ lifecycles developed in combination with ‘large and slow,’ to arrive at a suitable ecosystem for survival. The combination of different natural speeds related to durability enables the entire system to continue. Brand (1999) proposes that we should adopt this approach in the imaginative design of systems.

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The contradictory elements inherent in our relationship to materials, fashion and consumption suggest that a variety of approaches to speeds is critical to sustainability. Design to embrace wide variety of speeds of use is currently the only reasonable ecology. A range of approaches aiming to achieve a smaller material footprint in specific contexts, form a continuous 'sliding scale'. They range from long-life strategies: mendable, transformable, adaptable garments; to short-life proposals: disposable, compostable, recoverable and re-manufacture-able features. Services are proposed, to replace or support all points on the dial for speeds of use in a plurality of approaches, which can be connected and cross-disciplinary in concept and delivery.

The environmental problems associated with the industrial production of fashion are particularly suitable for reform through technology. The loss of energy that occurs in products as matter degrades, makes it crucial that designers investigate ways to disconnect production from consumption, creating the idea of a product through a service. If manufacturers are selling 'performance' rather than consumer durables, investment is required by brands to offer services, which extend their tangible products into intangible ones (van Hinte, 1997). The ability to rent or replace household products has greatly accelerated since 1997. Through Internet technologies, sharing and leasing services with a product thrown in, are increasingly viable.

However, when the statistics are for a physical 'product-based' economy are connected with an immaterial 'experience economy', Trentmann (2016) finds the environmental improvement 'inconveniently less clear'. In his study of consumption Trentmann questions whether digital solutions will automatically lead to greater sustainability, as currently the internet itself contributes 2 to 2.5 % of all greenhouse gas emissions and is rising fast. In design terms, solutions require the complex problem to be reduced to a series of imaginative components, requiring direct action. But when taken as a whole, solutions are rarely 'impact-free'. For example, when a society encourages lower consumption of goods, how are people's resources redirected?

Walker (2006; p.302) calls our attention to the need for product stability in our conception of past and future time. Solutions to issues of sustainability are really existential questions of meaning, as physical products will decay, but their meaning remains. How we think about time also affects how we think about the products in our lives. To tie physical products to a concept of time is to demonstrate technological, functional and aesthetic obsolescence in the context of today's shifting value systems. The shifting

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patterns of work and education, coupled with a technological landscape have taken certainty, locality and tradition and fused them with multi-culturalism, speed and change. It is easy to see why, in the current landscape, the present is even more fleeting and immaterial than before, whereas the future is constant and infinite. So, designers need to manage the appropriation and adaptation of goods in their forward trajectory, within the multi-connected world of consumers.

Designers are uniquely placed to be a catalyst for change, rethinking and remaking the products, services and systems that shape communities, by addressing the social issues that affect the quality of daily life. An approach to designing sustainable products has been further encouraged by the need for modern households to do something with the mounting collections of objects they own. Sentimental attachments to products, a thriving market for vintage models and a 'siege mentality' in the context of constant change, is said to be responsible for many people choosing to store their stuff and not the least contents of their wardrobes. Real estate, marketed for storage, has become the fastest growing sector in the US property market, as there is a marked reluctance to relinquish personal ownership.

Amongst speculative designers, who can develop innovative products from an understanding of sustainable imperatives, some will make robust, scalable businesses models. Not just the designed object but also its relationship to a system and its speeds must be exploited to its advantage. According to research by U.K.-based organization WRAP (2015), extending the average life of clothes by just three months of active use per item leads to a 5 per cent to 10 per cent reduction in each of the carbon, water and waste footprints. Imaginative possibilities for extending the life of materials and garments in the existing fashion system include methods, which develop a range of services. A structure is needed that can include products with both fast and slow lifespans, to take their place in the ecology of a sustainable world. This proposes a future in which functionality and technological progress are fused with meaning and value.

### Conclusion

The ideas and theories to reduce the damage connected to production use and disposal of fashion must be translated into garments with features, which allow them to serve the wide range of needs and purposes required. The changes in behaviour so often described in sustainable design need to have a supporting offer to accommodate them, to uncover meanings,



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to contextualise and communicate them. A mixed economy for fashion and textile design can then be developed that relies on a range of engagements with users. Local and decentralised production can be connected to highly technological solutions (Walker 2006). Certain clothes in our wardrobe can be the ‘quality’ agents we need to carry the bonds to permanence and connect to memories. They improve in value with age and are cherished. Others can be designed to be durable and connect with a system for revision, repair and renewal, where the whole or in part they could be replaced and redesigned. Others can function in a way that engages us in collective interaction, provides services and operates through temporary ownership to allow us ‘guardianship’ for a specific period. Still more can be the outcome of mass production for a positive form of ‘planned obsolescence’, where the material is recovered for re-manufacture, after a short time in use, because the purpose of the artefact has been served and the polluting effects of laundry outweigh the effects of production. The meaning of an object is timeless, whereas an individual garment might last only weeks before ‘recovery’.

These themes will be tested during 2017–2018 through a series of industry workshops, scientific collaborations and design-research prototypes which will ultimately lead to a set of ‘guidelines for circular fashion design’ to be published in 2018.

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