

Bason's 4 credos of design thinking may frame an alternative, circular and sustainable approach to the way we design, produce and use clothes

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Design thinking plays an essential role in tackling the wicked problems of a linear fashion system dominated by short product cycles, overconsumption and excessive waste. Written for tackling complex problems and systemic change in the public sector, Bason's (2010) four credos of design principles and actions provide valuable tools for analysis of the wicked problems facing the fashion industry and the role of design thinking in tackling systemic change of this sector. Utilising his design thinking framework may help the sector explore alternative, circular and sustainable approaches to the way we design, produce and use clothes. This article purposefully addresses Bason's credos slightly out of order. Credo 2 challenges the take/make/waste fashion sector *status quo*; Credo 3 engages and *values citizen* workers and consumers within the fashion supply chain; Credo 1 iterates *experimentally* to scale small successes; and finally Credo 4 promotes *concrete* solutions to eliminate textile waste. It is in this reworked order I choose to address the credos.

Challenge the Status Quo (Credo 2): A wicked problem of a high impact sector

A linear "cradle to grave" (McDonough & Braungart, 2009, p27), or "take, make and waste" system (Kerr and Landry, 2017, p.20) dominates the fashion sector. In this economic and manufacturing system resources are extracted for the creation of product to be sold, used and then disposed into landfill or through incineration. Short product lifecycles and planned obso-

lescence cater for an increasing demand by consumers for seasonal-specific, trend-driven, low price point, low quality, short-lifetime garments that require frequent replacement (Ninnimaki & Hassi, 2011). Defined as fast fashion, this planned obsolescence encourages a throwaway culture whereby many fashion consumers treat low price items as nearly disposable (Gwilt & Rissanen, 2011, McDonough & Braungart, 2009, Hvass, 2014). This places acute pressure on the natural environment and its ecosystems throughout textile extraction and production; and pollution and waste in the laundering and disposal of garments and textiles (Fletcher, 2010; EMF, 2017). The industry generates between 55 and 92 million tons of textile waste annually (Kerr & Landry, 2017), with 73% going to landfill or incineration (McKinsey&Company, 2016). The convoluted and opaque nature of this fashion supply chain, with conflicting stakeholders and perspectives, and systemic complexities of interconnected environmental and social problems vigorously meets Rittel's concept of a wicked problem (Churchman, 1967, p141). As Bason states in Credo 2, designers tackling these wicked problems must act as translators and facilitators to *challenge the status quo*.

Design cannot act in isolation from the complex social, economic and environmental issues that envelop it (Yelavich & Adams, 2014). If we perceive design as an act of future making (Simon, 1969) we have, in fact, designed the reality of waste and overconsumption, and the future effects and impacts of this system. Fry states we "*confront an unavoidable choice: we either support the status quo or we choose a path of change*" (2011, pviii). Drop-in solutions of production efficiencies, recycling and sourcing less environmentally impactful virgin materials come from a mindset of maintaining production volumes, profits and growth (Fletcher, 2010) without requiring substantial change to the linear design process. Bason asserts that by *challenging the status quo*, we challenge conventional thinking and reframe the question, ensuring we are tackling the *right* problem, such as issues of overproduction and disposable consumer culture.

Large scale systemic changes to the take/make/waste fashion supply chain are being proposed based around principles of a circular economy (Becker, 2017; EMF, 2017). In a restorative and regenerative circular textiles economy; clothes, textiles and fibres are kept at their highest value during use, bypassing disposal to re-enter the economy afterwards, providing benefits for business, society and the environment (EMF, 2017; Fontell & Heikkila, 2017; Geissdoefer, et al, 2017). Rethinking output and demand is as critical as rethinking inputs (Ballie and Woods, 2015). Demand-led models and Product Service Systems (PSS) such as rental, repair, sharing and resell business platforms are the least complex way for the sector to reduce its environmental footprint; displacing resource extraction involved in the production and distribution of new clothes (Goldsworthy, 2014; Hvass, 2016; Sandvik & Stubbs, 2019). These alternative models require a value creation mind-set and a design thinking approach,

bringing together stakeholders from across the system to collaborate, prototype, learn, refine and scale what works (EMF, 2017). Such collaborative systems involve an active role for both workers and consumers within the supply chain; introducing Bason's Credo 3, *Value the citizen*.

Value the citizen (Credo 3)

Bason's third credo places people, their practices and contexts at the heart of design thinking and the creative process (2010). Empathy is widely thought essential to design thinking approaches (Kouprie & Visser, 2009; Ho, Ma & Lee, 2011). Value is not divided evenly in the existing fashion and textile value chain (Fletcher, 2010), furthermore processes of design and production are commonly siloed, operating in different geographical locations, with limited designer interaction with the people who make the garments (Gwilt, 2011). A circular economy model encourages close collaboration across the whole value network, from workers in the fibre and textile industry to garment factories. It is distributive by design so that all parts of the value chain can provide good working conditions and pay well (EMF, 2017). These collaborative business models significantly shorten the supply chain; enabling transparency, agility and speed.

Bason's use of the term *citizen* in reference to the user is also profound for the fashion industry. More than ever, the fashion industry needs to appeal to and engage consumers as citizens. Hirscher, Mazzarella and Fuad-Luke (2019) refer to engaged and informed consumers as 'prosumers'. Engaging the 'prosumer' or *citizen* as a critical member of the design and manufacturing process is imperative, as their role in the repair, care and disposal of the product ultimately determines environmental impact (Fletcher & Grose, 2012; Fontell and Heikkila, 2017). PSS models and clothing take-back schemes have a dual purpose; while critical for closing the loop in a circular business model, they also further awareness about the need for change. By valuing the consumer as a *citizen*, they imply a sense of ethics, community and environmental sustainability necessary to tackle user-centered wicked problems such as spiraling consumption, plastic microfibers entering the ocean, low recycling levels and disposable behaviours. This engagement with users as citizens also helps correct misinformation or "greenwashing" (Gwilt, 2020), and promotes authentic and transformative change of the sector.

See everything as an experiment (Credo 1)

Bason suggests using design thinking to explore innovations in a more open-ended, reflexive learning process. This experimental and iterative approach embraces the notion of ‘falling forward’, practicing and experimenting in a small scale and making the ‘smart errors’ that feed the process (Bason, 2010). When experiments are proven in a small way, they can be scaled in a larger way to effect change. Australian-based Citizen Wolf combines custom-fit technology algorithms and on-demand manufacturing within a micro-factory in a unique experimental business model that could be scaled and rolled out in other locations (Csaki, 2020). Similarly, innovator Veena Sahajwalla’s experimental development of a micro-factory to transform glass and textiles into tiles and ceramics has the potential for wider roll-out (Muldowney, 2020). Bason’s emphasis on real world small-scale testing is particularly relevant in tackling issues of waste in the fashion supply chain, as improved efficiencies in production and raw material use may actually become drivers for growth and consumption (Fletcher, 2010). Experimentation, iteration and weighing the effects is a critical part of design thinking for systems change in the fashion sector.

Be concrete (Credo 4)

Bason’s fourth credo examines the role of *concrete* visualization, ideation and physical and virtual prototypes in design thinking approaches to complex problems. New 3D modelling digital technologies have a powerful role to play in rapid prototyping to assess fit, aesthetics and sizing in fashion product development, dramatically reducing the use of materials, textile waste and carbon footprint during sampling, and significantly speeding up the process. The software enables the simultaneous design of 2D patterns and the resulting 3D form as a virtual garment on an avatar, and includes a fabric library to demonstrate the handle and fall of textiles. Its application for demand-led business models such as fashion label Atacac enable pre-order from the virtual realm (Nissen & Nerup, 2020); and also enables a straightforward application of zero waste design methods in ‘designing out’ textile waste in garment manufacture (McQuillan, 2020). The immediate visualization of the relationship of the 2D pattern to the 3D digital form quickly makes problems and potential solutions tangible.

Final Comments and Conclusion

Bason states that designs are played out long after the designers exit the process (2010). This could not be more true of the fashion industry, where designers disregard the impact of the

extraction and processing of raw materials and the effects of textile waste in the linear textile economy, lingering far longer than the fashion cycle in which a garment is design, produced and worn. While written for tackling complex problems and systemic change in the public sector, Bason's four credos provide valuable design thinking tools for exploring alternative, circular and sustainable approaches to the way we design, produce and use clothes. By challenging the linear state of the fashion industry *status quo*; engaging both the undervalued workers within the production system and a *citizen* consumer to tackle textile waste and thoughtful design; iterating *experimentally* and scaling small successes; and finally using virtual design processes and technology driven demand-led systems to rapidly customise *concrete* solutions without creating textile waste – Bason's 4 credos provide a useful framework for designing a more sustainable and ethical fashion future.

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