

Clothing longevity perspectives: exploring consumer expectations, consumption and use

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Abstract: The production, distribution, use and end-of-life phases of the clothing lifecycle all have significant environmental impacts, but complete lifecycle assessment has identified that extending the active life of garments through design, use and re-use is the single most effective intervention in reducing the overall impact of the clothing industry (WRAP, 2011). In response, Government funded clothing longevity research seeks to develop and test industry-led design strategies to influence and enable consumers to keep garments in active use for longer (Cooper *et al.*, 2014). While recent UK research has indicated significant potential to influence more sustainable consumer behaviour (Langley *et al.*, 2013; YouGov, 2012), up-to-date qualitative research is required to discover how consumer attitudes, expectations and behaviours in relation to clothing lifetimes affects garment care and clothing use. This will help to inform industry-led strategies by understanding where effective changes can be made that will potentially have most impact.

This paper presents preliminary findings from a Defra funded action based research project, 'Strategies to improve design and testing for clothing longevity'. Qualitative research methods are used to explore consumer attitudes, expectations and behaviours at purchase, use and disposal stages of garment lifetimes, and gather data on practices of garment wash, wear, care and maintenance in everyday life. The research findings are discussed in relation to industry-led strategies aimed at extending the life of clothes.

Introduction

The production, distribution, use and end-of-life phases of the clothing lifecycle all have significant environmental impacts but life cycle assessment has identified that extending the active life of garments through design, use and re-use is the single most effective intervention in reducing the overall impact of the clothing industry; in fact extending the average life of clothes by just three months of active use per item would lead to a 5-10% reduction in each of the carbon, water and waste footprints and save billions from the costs of resources in clothing supply, laundry and disposal in the UK (WRAP, 2011).

*Quite simply, if clothes have a longer usable life, they can be replaced less frequently – reducing the volume discarded and meaning fewer resources are consumed in manufacturing. (Cooper *et al.* 2013: 3).*

The current Defra funded project, 'Strategies to improve design and testing for clothing longevity', aims to explore the technical, behavioural and strategic obstacles to implementing innovative and sustainable product development processes that could extend clothing lifetimes. It will seek to identify the knowledge, skills, processes and infrastructure that could support wider adoption of design for longevity in the clothing industry and make garments last longer, including industry's role in supporting sustainable consumer behaviour.

The paper aims to explore consumers' attitudes, expectations and behaviours, and influences on these, and will discuss initial findings in relation to suggested industry-led strategies aimed at enhancing clothing lifetimes. Beginning with a discussion of the impact of consumers on clothing lifetimes, initial

findings of qualitative research with different consumer groups targeted as key markets for clothes with enhanced durability are discussed.

Clothing lifecycles: consumer impact on longevity

Purchase

In the design and production phases, industry can support the longevity of garments through measures such as designing classic styles, using more durable materials and stitch construction, or testing to ensure high standards of colour fastness (Cooper *et al.*, 2010). However, the rise of fast fashion in the UK, characterised by low cost, poor quality fibres and short garment lifetimes (Defra, 2008), has been attributed to a 'throwaway' attitude to clothing that is only expected to be worn a few times (Birtwhistle and Moore, 2007).

Encouragingly however, recent WRAP research has found that there are positive signs of consumer demand for longer lasting clothes. In a UK survey, 52% of respondents acknowledged they "could do more to buy items that are made to last for longer while continuing to look good and would like to do so"; pertinently for retailers, there is a willingness to pay higher prices for durability (Langley *et al.*, 2013). Consumer interest may be limited, however, by the lack of recognised ways to measure and communicate longevity (WRAP, 2011), by feeling limited in their ability to check for and assess durability, and the extent to which they do this (Langley *et al.*, 2013).

Consumers' expectations of clothing durability vary depending on factors such as the context of use and retail price (Bide, 2012). However, studies that seek to quantify clothing lifetimes (e.g. Langley *et al.*, 2013) do little to explicate whether consumers consider these factors at point of purchase, or how they affect behaviour during the use phase, which the following section will discuss.

Use: Wear, Care, Maintenance & Repair

Clothing care (e.g. washing, bleaching, ironing, drying, and professional dry cleaning) and maintenance (e.g. removal of pilling) are processes that paradoxically enable the continued use of clothes and contribute to their inevitable deterioration (Kelley, 2009). How well consumers understand care labels, whether they follow them, and the frequency of washing, has a significant impact on how quickly this

deterioration will occur. Contemporary clothes may be more likely to wash out rather than wear out due to incorrect selection of wash cycles, and use of increasingly abrasive detergents (ASBCI, 2013), excessive use of fabric conditioner (Chiwese & Cox Crews, 2000), unnecessarily frequent washing, and tumble drying (Laitala *et al.*, 2011). However, while most respondents claim that they already do everything they can to look after items so that their clothes are kept in regular use for longer, men, younger people and those on higher incomes were found to lack confidence in their clothing care ability (Langley *et al.*, 2013).

Many consumers would 'seriously consider' wearing more clothes a second time before washing (Langley *et al.*, 2013), but most studies into consumer clothing care focus on the environmental and financial benefits of reduced energy, water and chemical usage (e.g. Bain *et al.*, 2009; Dombek-Keith & Loker, 2011) and relatively little is known about consumers' actual care and maintenance behaviours, or knowledge and understanding of the impact of care processes on clothing lifetimes.

Studies of the socio-technical systems of laundering suggest that understanding the interrelated social and technical dimensions of clothing wear and care patterns, such as personal standards of cleanliness, style, social norms and judgments on appearance, as well as the physical 'systems of provisions' can identify opportunities for influencing change towards more sustainable practices (Shove, 2003). Others suggest that understanding consumers' social and experiential relationship with clothing during the use phase, as well as their capacity for adequate care, maintenance and repair, is crucial to ensuring garments are kept in continued active use (e.g. Fletcher, 2012; Laitala & Boks, 2012; Niinimaki & Armstrong, 2013). Studies such as these have highlighted that how much garments are valued determines the level of care and maintenance they will receive and the likelihood of repair, and different types of value have been identified beyond purchase price, such as functional, aesthetic, emotional, social, and sensory value (see for example: Fletcher, 2012; Laitala & Boks, 2012; Niinimaki & Armstrong, 2013; Pink, 2005) that could potentially be fostered through industry led strategies such as using naturally anti-bacterial fibres to keep clothes smelling fresher for longer (Laitala & Boks, 2012). What determines the end of a garment's life and

associated implications for re-use and disposal will be discussed in the next section.

Re-use & disposal

Determining garment disposal is largely subjective and variable, as “two people may have very different criteria to judge the point at which deterioration represents the end of an item’s useful life” (Bide, 2012:126). Some have been found not to mind pilling or small holes, for example, whereas others would discard these as too worn out (Laitala & Boks, 2012). Psychological reasons such as a desire for something new, boredom or because garments are out-dated are also common reasons for disposal (see for example Cooper *et al.*, 2013; Laitala & Boks, 2012; YouGov 2012). As a result, many garments are discarded before the end of their potential lifetime (Black, 2008).

A large amount of used clothing that is still wearable is donated to charities in the UK for re-use (WRAP, 2012; Fisher *et al.*, 2008; Birtwhistle & Moore, 2007), but supply is larger than demand in the UK and a large amount is exported overseas where it has been reported to have negative effects on local economies (Rodgers, 2015). As such, increased re-use within the UK is a preferred route to clothing longevity (WRAP, 2012). However, social stigmas and hygiene concerns limit purchase of second-hand clothing (Fisher *et al.*, 2008). Other re-use methods, such as selling through online platforms (e.g. eBay), passing on to friends and family, or swapping at ‘swishing’ events rely largely on garments maintaining their value (Birtwhistle & Moore, 2007; Laitala & Boks, 2012).

For garments that are no longer wearable, the method of disposal is pertinent as those sent for recycling can be used again as industrial rags, or shredded down to use for insulation and carpet underlay (WRAP, 2012). Generally, disposal is based on convenience, and consumer awareness of what can be recycled, how, and the benefits of doing so, has been found to be limited; many garments end up in the bin (Fisher *et al.*, 2008; Birtwhistle & Moore, 2007). Ensuring the value of old textiles is understood and providing services to enable greater recycling can therefore ensure material re-use in alternative contexts.

Research design

This research aims to explore consumer perspectives on clothing longevity in order to consider where industry and policy could influence change. Three key consumer groups, identified in previous research (Langley *et al.*, 2013), were targeted as priorities for longevity research: younger consumers most associated with ‘fast fashion’ consumption (F); older, professional ‘slow fashion’ consumers with a tendency to focus on durability and high quality (S); and parents of school age children whose clothes are subject to high wear and tear (P). These groups were chosen as they represent distinct market segments with different shopping habits, demands of clothing, and lifestyles that influence expectations, attitudes and behaviours relating to clothing lifetimes; these variables were explored using the following qualitative methods.

Focus groups

Four focus groups were held in November and December 2014 with a total of 29 participants, lasting approximately two hours each. Purposive sampling recruited participants in the three consumer segments outlined above and a higher proportion of female participants were selected to reflect the fact that women purchase more clothes than men. Mintel (2014) estimate that 49% of consumers’ clothing spending is on women’s outerwear, as opposed to 26% being spent on men’s outerwear. Additionally, women are often responsible for buying clothing for children and male relatives and are therefore the dominant purchasers.



Figure 1. Focus group favourite garment exercises

As an icebreaker, each focus group started with an exercise asking participants to sketch and describe a favourite garment (Figure 1). This was designed to set the scene around relationships with clothing and explore different types of value associated with clothing. Participants were invited to discuss their everyday relationship with clothing, framed around the four key stages of garment lifecycles: purchase, use – including wear, care, maintenance and repair – re-use and disposal.

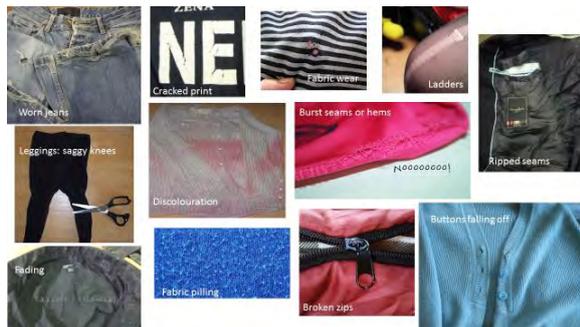


Figure 2. Images of common garment failures used as focus group discussion points

Participants were next asked to consider how long they expect different garment types to last and why, to discuss experiences of common garment failures shown in a series of images (Figure 2) and explore what determines the end of a garment's life, and open up discussions around care, repair and maintenance behaviours. Participants were asked to describe specific examples of short-lived garments, as well as those that had lasted a long time, to explore the reasons why.

Further exercises asked participants to reflect on what would make their [or their children's] clothes last longer and to give their thoughts on current and proposed clothing longevity strategies and influences, such as a durability index suggested by WRAP (2012) or product durability guarantees such as those offered by Flint and Tinder's ten year hoodie (n.d.). Focus group transcriptions were analysed with NVivo software, coding emerging themes and concepts.

As qualitative research the findings cannot be used to generalise about the UK population as a whole, but the rich textual data offers insight into existing expectations, attitudes and behaviours related to clothing about which relatively little is known. As the research is

currently work-in-progress, only selected findings are discussed in the following section.

Selected findings and discussion

Results revealed a variety of factors that affect clothing longevity during the different stages in the garment life cycle, purchase, use and disposal. They suggest that changes in industry practice and public policy could potentially lead to longer clothing lifetimes at each of these stages.

Consumers want garments to last a reasonable lifetime in relation to their expectations, which are influenced by material and garment quality, how frequently it will require laundering, care processes, maintenance, style, fashion trends, brand, purchase price and considerations of the frequency and intensity of wear in its intended context of use (e.g. work or casual wear). Participants found it hard to quantify their expectations of the lifetime of particular garment types, though, and when they did there was considerable variation.

The fast fashion group appeared to most commonly experience garments not lasting as long as they had expected; there is a sense of futility and resignation, despite wanting them to, and investing time in maintaining them. The individuals expressed feeling trapped by the cheap, fast system of short-life garments, which 'obliges' them to frequently buy new. Overall, the slow fashion group were most likely to say that all their clothes had met their expectations of longevity and expressed confidence in assessing durability; however they had still experienced disappointingly short-lived garments.

In line with the findings of Langley *et al.* (2013), consumer demand for longer lasting clothes was evident, particularly among younger fast fashion consumers. The evident dissatisfaction, disappointment and frustration associated with short-lived clothing, along with the rise of campaigns such as Fashion Revolution Day (2014) increasing awareness of the impact of ethical standards and waste in the clothing industry, suggests that this demand may be set to increase.

Participants agreed that assessing the durability of a garment is challenging and that price did not necessarily positively correlate with high quality. For example, a respondent from the 'slow fashion' group said:

I think that's, it's sort of experience isn't it? ...you can't always 100% tell, because you could buy something and be surprised by it, but you do tend to look at the quality overall, you know, you fold it up. You might look at the seams. You might... just look at the general hang of it, how the fabric reacts, what it's made from. So, those sorts of things. It's not necessarily indicated by the price I don't think.

Participants found it particularly hard to assess if a garment would pill and some were unsure of causes, prevention or pill removal techniques. Consistent with findings of previous research (Langley *et al.*, 2013; WRAP, 2011) consumers' capacity for making clothes last is therefore largely affected by the quality offered by retailers, as well as their own ability to assess durability and capacity for adequate care and maintenance. This could be supported by increasing durability standards and provision of a durability index that could help consumers assess how long a garment is likely to last; they could then make informed decisions based on the personal factors found to influence their purchase decisions, such as intended context of use. Communicating advice on prevention of pilling, as well as provision of removal advice and equipment could also help.

Across the focus groups, there was an implicit understanding that care processes impact upon garment lifetimes, but care labels are rarely followed beyond the first wash and many consumers find them hard to understand. In the most part, assessment of care is based on experience and knowledge of fabric/fibre types, revealing a kind of tacit materials-based competence. Not all know or understand the reasons for having separate detergents for different colours or fibres, and fabric conditioner overdosing is evident, which has been found to increase propensity to pilling (Chiwese & Cox Crews, 2000). Laundry practices are based on convenience and valid concerns about energy consumption (i.e. financial and/or environmental drivers). For example, families may have high volumes of washing and lack time to separate loads by fibre type, and individuals living alone have low volumes of washing but may not want to run many small loads.

Better information provision about clothing care could help facilitate longer lasting clothes as well as reduce the water, energy and chemical

impacts of laundry processes. However, resources to this end exist, such as a comprehensive, user-friendly online guide that is signposted on garment care labels, launched in 2014 (Clevercare, n.d.). The effectiveness of this in engaging consumers is unknown, but across the focus groups younger fast fashion participants responded most positively to the suggestion of supportive online resources.

The value of an item was found to affect the use relationship: consumers appear more likely to hand-wash, separate colours, maintain and repair higher priced items. Value is understood beyond purchase price, though – emotional value, exchange potential, social value, aesthetic and sensory value are also important factors. To facilitate these types of value, industry could employ various targeted strategies: enhancing clothing's emotional durability and exchange potential by selecting materials that age gracefully (Chapman, 2005), or increasing sensory value by using fabrics that smell fresher for longer, such as naturally anti-bacterial wool fibres (Laitala & Boks, 2012).

Summary and next steps

This paper has introduced ways in which consumer attitudes, expectations and behaviours impact upon clothing lifetimes. Initial findings from qualitative research, currently work-in-progress, that explored these aspects in key consumer groups are consistent with previous research that revealed a demand for longer lasting, more durable clothes (Langley *et al.*, 2013).

Within the group segments explored, distinct priorities and attitudes to clothing longevity were discovered that reveal areas where clothing brands at different market levels can focus strategies to support clothing longevity.

The full findings of this research will be published in a technical report for Defra at the conclusion of the project in September 2015.

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References

Armstrong, C. M., Niinimäki, K., Kujala, S., Karell, E. and Lang, C. (2014). Sustainable product-service systems for clothing: exploring consumer

- perceptions of consumption alternatives in Finland. *Journal of Cleaner Production*. In press, uncorrected proof. <http://dx.doi.org/10.1016/j.jclepro.2014.01.046>
- ASBCI, (2013). *Caring for Your Clothes* (3rd edition). Industry manual from the Association of Suppliers to the British Clothing Industry: UK.
- Bain, J., Beton, A., Schultze, A., Mudgal, S., Dowling, M., Holdway, R., Owens, J. (2009). *Reducing the Environmental Impact of Clothes Cleaning*. Final Report to the Department for Environment, Food and Rural Affairs (Defra): London
- Bide, M. (2012). *Testing Textile Durability*. In Annis, P. (Ed.) *Understanding and Improving the Durability of Textiles* 126-142. Woodhead: Cambridge.
- Birtwistle, G. and Moore, C.M. (2007). Fashion clothing – where does it all end up? *International Journal of Retail & Distribution Management*, 35(3), 210 – 216. <http://dx.doi.org/10.1108/09590550710735068>
- Black, S. (2008). *Eco-chic: The Fashion Paradox*. Black Dog Publishing: London.
- Chapman, J. (2005). *Emotionally Durable Design: objects, experiences and empathy* (3rd edition). Earthscan: London.
- Clevercare (n.d.). GINETEX– The international Association for textile care labelling. Retrieved from <http://www.clevercare.info/en>
- Cooper, T., Claxton, S., Hill, H., Holbrook, K., Hughes, M., Knox, A., & Oxborrow, L. (2014). *Clothing Longevity Protocol*. A report for WRAP: London. Retrieved from <http://www.wrap.org.uk/content/clothing-longevity-protocol-1>
- Cooper, T., Fisher, T., Hiller, A., Goworek, H. and Woodward, S. (2010). *Excessive speed/short lives: Attitudes to clothing longevity and disposal*. In Ceschin, Vezzoli and Zhang (Eds.), *Sustainability in Design: Now! Proceedings of the LeNS Conference, Bangalore, India, (728-737)*. Retrieved from <http://www.lensconference.polimi.it/>
- Cooper, T., Hill, H., Kininmonth, J., Townsend, K. and Hughes, M. (2013). *Design for Longevity: guidance on increasing the active life of clothing*. Prepared for WRAP: Banbury. Retrieved from http://www.wrap.org.uk/sites/files/wrap/Design%20for%20Longevity%20Report_0.pdf
- Chiwise, A. and Cox Crews, P. (2000). Influence of Household Fabric Softeners and Laundry Enzymes on Pilling and Breaking Strength. *Textile Chemist and Colorist & American Dyestuff Reporter*, 32(9), 41-47.
- Defra (2008). *Sustainable clothing roadmap briefing note December 2007: sustainability impacts of clothing and current interventions*. Defra: London.
- Dombek-Keith, K. and Loker, S. (2011). *Sustainable Clothing Care by Design*. In Alison Gwilt and Timo Rissanen (eds) *Shaping Sustainable Fashion: Changing the Way We Make and Use Clothes* (pp101 – 116). Routledge: London.
- Fashion Revolution Day (2014). Retrieved from <http://fashionrevolution.org/>
- Fisher, T., Cooper, T., Woodward, S, Hiller A and Goworek H. (2008a). *Public Understanding of Sustainable Clothing*. Prepared for the Department for Environment, Food and Rural Affairs (Defra) by Nottingham Trent University and Sheffield Hallam University. Defra: London.
- Fisher, T., Cooper, T., Woodward, S, Hiller A and Goworek H. (2008b). *Public Understanding of Sustainable Clothing: Appendix to Final Report to the Department for Environment Food and Rural Affairs*. Prepared for the Department for Environment, Food and Rural Affairs (Defra) by Nottingham Trent University and Sheffield Hallam University. Defra: London.
- Fletcher, K. (2012). *Durability, Fashion, Sustainability: The Processes and Practices of Use*. *Fashion Practice Journal*, 4(2), 221-238. [10.2752/175693812X13403765252389](https://doi.org/10.2752/175693812X13403765252389)
- Kelley, Victoria (2009). *The Interpretation of Surface: Boundaries, Systems and Their Transgression in Clothing and Domestic Textiles, c.1880–1939*. *Textile: The Journal of Cloth and Culture*, 7(2), 216-235. <http://dx.doi.org/10.2752/175183509X460100>
- Laitala, K. and Boks, C. (2012). *Sustainable Clothing Design: Use matters*. *Journal of Design Research*, 10(1/2), 21 – 139. [10.1504/JDR.2012.046142](https://doi.org/10.1504/JDR.2012.046142).
- Laitala, K., Boks, C. & Klepp, I. G. (2011) *Potential for environmental improvements in laundering*. *International Journal of Consumer Studies*, 35(2), 254–264. [10.1111/j.1470-6431.2010.00968.x](https://doi.org/10.1111/j.1470-6431.2010.00968.x) 968
- Laitala, K. and Klepp, I. G. (2011, April). *Environmental improvement by prolonging clothing use period*. Paper presented at *Towards Sustainability in the Textile and Fashion Industry conference: Copenhagen*. Retrieved from http://www.sifo.no/files/file77517_laitala_klepp_-_prolonging_clothing_use_period.pdf
- Langley, E., Durkacz, S., and Tanase, S. (2013). *Clothing longevity and measuring active use*. Prepared by Ipsos MORI for WRAP: London. Retrieved from <http://www.wrap.org.uk/content/clothing-longevity-measuring-active-use>
- Mintel (2014) *Clothing Retailing UK, October 2014*, London: Mintel Group.
- Niinimäki, K. and Armstrong, C. (2013). *From pleasure in use to preservation of meaningful memories: a closer look at the sustainability of clothing via longevity and attachment*. *International Journal of Fashion Design Technology and*

Education, 6(3), 190-199.
10.1080/17543266.2013.825737

Niinimäki, K. and Hassi, L. (2011). Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production*, 19(16), 1876-1883.
10.1016/j.jclepro.2011.04.020

Pink, S. (2005). Dirty laundry. Everyday practice, sensory engagement and the constitution of identity. *Social Anthropology*, 13(3), 275-290.

Rodgers, L. (2015, February 15th). Where do your old clothes go? BBC News. Retrieved from: <http://www.bbc.co.uk/news/magazine-30227025>

Ross, Alan (ed.). (2013). *Caring for Your Clothes*. Association of Suppliers to the British Clothing Industry (ASBCI): Halifax.

Shove, E. (2003). Converging Conventions of Comfort, Cleanliness and Convenience. *Journal of Consumer Policy*, 26(4), 395-418.
10.1023/A:1026362829781

WRAP (2012). *Valuing Our Clothes: The true cost of how we design, use and dispose of our clothing in the UK*. Prepared for WRAP: London. Retrieved from <http://www.wrap.org.uk/sites/files/wrap/VoC%20FINAL%20online%202012%2007%2011.pdf>

You Gov (2012). *Bored with Your Clothes? A report by You Gov for M&S*. Retrieved from <https://yougov.co.uk/news/2012/06/27/bored-your-clothes/>