



The opportunities that different cultural contexts create for sustainable design: a laundry care example



Jak Spencer^{*}, Debra Lilley¹, Samantha Porter²

Sustainable Design Research Group, Loughborough Design School, Loughborough University, Loughborough LE11 3TU, UK

ARTICLE INFO

Article history:

Received 7 October 2013

Received in revised form

7 April 2015

Accepted 13 April 2015

Available online 30 April 2015

Keywords:

Behaviour

Culture

Cross-cultural research

Sustainable design

Laundry care

ABSTRACT

Increasing economic growth coupled with rapidly expanding populations in developing countries has led to the emergence of a large “consumer class”. This rapid increase in consumption has altered household consumption behaviour and resource use, often adversely affecting their environmental footprint. There is, therefore, a pressing need to understand the effect culture has on product interactions, particularly when designing new products and systems for emerging markets. This paper presents the findings of an in depth user study which set out to explore the effect of culture on household resource use. In depth, qualitative user research was undertaken into the laundry procedure in three regions. In-context interviews, observations and household tours were carried out in 19 households across three sites; The East Midlands, UK; Curitiba, Brazil; and Bangalore, India. Findings show significantly different behaviours in washing techniques, routine, consumption patterns and aspirations. The results inform the development of a methodological cultural resource as well as set of 7 design guidelines to understand the effect of designing interventions for sustainable behaviour in different cultural contexts.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Over the last half-century the increasing strain on the earth's finite resources has meant that sustainable development has gained increasing prominence in governmental policy around the globe (Jackson, 2009). One of the main causes for this environmental degradation has been the rapid industrialisation of developed countries (Smith, 1997; Green and Vergragt, 2002).

Traditionally this over-consumption from developed ‘Western’ economies has been counteracted by ‘under-consumption’ in developing countries. If everyone lived like the average UK consumer we would require 3.4 planets to support our resource use, whilst in India it is just 0.4 planets (Global Footprint Network, 2010). However this imbalance is now changing as large emerging markets, with millions of new consumers, are growing rapidly in developing countries following the ‘Western’ model of consumption.

Despite efforts to reduce resource consumption through increased technological product efficiencies, household energy use has increased (Tang and Bhamra, 2012). In recent years, however, there has been a growing research area in design to reduce resource impacts during the use phase of products or services (Lockton et al., 2008; Petterson and Boks, 2008; Lilley, 2009). Until recently however these have tended to focus on research of a single context with limited cross transferability or insight into other contexts. The few projects that have used cross-cultural studies have generated significant insights into the differences of user behaviour; however they have been very exploratory in their nature and left the door open for further studies (see Matsushashi et al., 2009; Elizondo, 2012 for examples).

There is a pressing need to understand cultural differences in behaviours, particularly in the context of designing less resource intensive products and services; however this requires a deep-rooted understanding of the social, cultural and personal norms of a region. Culture plays a crucial role in the energy impact of household behaviours; however, it is an area that has been neglected in the research (Shove, 2003; Pakula and Stamminger, 2010; Litala et al., 2012). The aim of this research paper is to understand the antecedents of household behaviour and how they can be affected in different cultural contexts. The results enable designers to act on previous design for behaviour change theory

^{*} Corresponding author. Tel.: +44 1509223581.

E-mail addresses: jakspencer@gmail.com (J. Spencer), d.lilley@lboro.ac.uk (D. Lilley), c.s.porter@lboro.ac.uk (S. Porter).

¹ Tel.: +44 1509222660.

² Tel.: +44 1509222782.

outlined by Lilley (2009), Lockton et al. (2008) and Pettersen and Boks (2008) to create products which motivate more sustainable behaviours.

In the next section the complex terms of culture and design for sustainable behaviour are introduced with relevance to the research. In Section 3 the methods for in-depth user-centred research into laundry behaviours in the UK, Brazil and India are presented. In Section 4 the findings from the study are outlined before Section 5 discusses how the results have led to the development of a set of cultural factors and a set of guidelines. Finally the paper concludes by discussing the potential application for the research in changing behaviour through design by moderating designs towards desired behaviours.

2. Theory

Culture is a divisive term that causes considerable debate amongst academics. Using culture as an explanatory concept can reduce clarity and confuse readers because of the ambiguity of its definition. Understanding anything about human everyday life can be described as a cultural research project (Wilhite, 1999). Despite the controversy, the few design studies that have used culture as a source of inspiration have generated varied and insightful results (Wilhite, 1999; Matsushashi et al., 2009; Elizondo, 2012).

A cross-cultural study is one that “explicitly aims to highlight cultural similarities and differences in one or another aspect of everyday life, and use them to open avenues of theoretical enquiry” (Wilhite, 1999; p2). Definitions for the term have been researched extensively in classical anthropology, with common themes emerging such as the importance of symbolic values, shared knowledge, learned behaviour and collective communication (Kroeber and Kluckhohn, 1952; Geertz, 1973; Banks and McGee, 1989). Importantly, culture is collective with people living within a defined social environment sharing patterns and perceptions which impact heavily on their attitudes and behaviours (Chau et al., 2002). Although divisive, it is clear that culture and its encompassing terms can be used to inspire designers to new ways of thinking about problem solving, provided a clear definition can be articulated. For this reason culture, in the context of this research, has been defined as: *the shared patterns of behaviours, interactions and understanding learned by a collective group of people.*

In business and organisational theory one of the main models used to understand people in different cultures is Hofstede's Cultural Dimensions (1980). Hofstede identified 5 values that differ between cultures and can be used to explain the relationship between employees in a global organisation. These values were: the power distance index (acceptance of hierarchy), collectivism/individualism (sense of belonging to the larger group), masculinity (competitiveness and ambition), uncertainty avoidance index (minimising uncertainty), and long-term orientation (short-term or long-term foresight) (Hofstede, 1980).

As the introduction alluded to, technological advancements creating more efficient appliances tend to be nullified by an increase in consumption (Steg and Vlek, 2009). In reality, individual behaviours can have a far greater effect on household resource consumption than the technological improvements in product efficiencies (Wilson et al., 2010). Similar to culture however, behaviour is a complex topic that spans across many different fields of research. Behaviours around the home are often habitual, formed as part of routines, with little or no cognitive thought beyond the initial completion of the task (Steg and Vlek, 2009; Goldsmith and Goldsmith, 2011). Cultural context strongly affects the formation of habits through the definition of internal characteristics (attitudes, values, etc.) and external characteristics (physical constraints, social practices, etc.) (Triandis, 1980). Habits are developed over a long

period of time, with social, environmental and contextual influences and are affected by the understanding, motivation and ability of individuals to change their actions (Abrahamse et al., 2005; Steg, 2008).

One key factor integral to developing behaviours is personal motivations. Social theorists suggest that an individuals' perceptions of themselves and the others around them will determine their behaviour (Steg and Vlek, 2009) with consumption patterns fitting into a social order a common feature amongst consumers (Wilk, 2002). Individual choice theorists, however suggest that motivations come from weighing up the greatest benefit from the lowest cost (Steg and Vlek, 2009). Whilst motivational factors are important, they are not the sole attribute influencing behaviour. An individuals' surroundings; their context and physical environment such as culture, social class, education, climate, geography, public policy, taxes, cost of goods, etc, will also influence behaviour (Stern, 1999).

There are two predominant theories used to understand everyday behaviour in a design context. These theories introduce the idea of either defining the psychological rational antecedent of an individual's behaviour as an actor (behaviour theory), or to define it based on how societal elements create action or practice (social practice theory). Although Shove's Practice Orientated Product Design Manifesto (Shove, 2006) has introduced the idea of practice into the design process, the number of design studies that have used this approach are still fairly limited (Kuijer and De Jong, 2009; Haines et al., 2012). Shove's definition of design, focused on isolated, individual and non-temporal components is also argued to be a limited and out-dated way of thinking about design, with current thinking focused around the user's relationship with the internal and external factors that impact and define their context of use and experience (Wilson et al., 2013). Behaviour theory has well defined models with clear applications and limitations whilst practice theory is limited by its broad, ill-defined concept and lack of application in design cases (Wilson et al., 2013). Therefore, behaviour theory is used as a basis to build upon in this research.

Design for Sustainable Behaviour (DfSB) attempts to introduce design strategies to influence consumer behaviour towards more sustainable action during the use phase of a product (Lilley, 2009). Designers have the opportunity to challenge and affect habit formation through shaping user perception, learning and interaction (Wilson et al., 2010; Tang and Bhamra, 2012). Lilley (2009) argues that there is an axis of influence between the user and the product that determines where the power in decision making lies, see Fig. 1. At one end the user makes an informed decision to change behaviour based on real-time aural, visual or tactile information or feedback. At the other end of the axis are technology driven solutions that use intelligent technologies to dictate the mode of use entirely. Understanding this axis of influence allows the designer to position an intervention that balances the needs of the user with the nature of the targeted behaviour (Haratty et al., 2012). Technology driven solutions may not require the user to alter their behaviour consciously, whilst putting the user in control may involve building an emotional relationship between the user and the product, helping to reduce product obsolescence and increase longevity (Chapman, 2005). Whilst powerful in their intent, these design intervention strategies can only be effective if the various approaches are correctly matched to users' needs, understanding and motivations (Haratty et al., 2012).

Lilley's original axis has been considerably built upon over the last five years or so. Lidman et al. (2011) propose a model based on the original axis using the strategies developed by Tang (2010) and Wever et al. (2008) to suggest a classification with five strategy categories along the axis of control: Enlighten, Spur, Steer, Force

Download English Version:

<https://daneshyari.com/en/article/1744419>

Download Persian Version:

<https://daneshyari.com/article/1744419>

[Daneshyari.com](https://daneshyari.com)