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## Introduction: Design for Behaviour Change

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**Abstract:** The 'Design for Behaviour Change' SIG seeks to promote the understanding and applications of design for behaviour change across the various domains of design. Design for behaviour change is seen as a potent way to tackle some of the biggest problems in the world around us. However, covering divergent fields and problems, there is a challenge to create a coherent understanding of practices and approaches relating to design for behaviour change.

The 'Design for Behaviour Change' SIG strand at the DRS2016 conference brings together 8 papers in two sessions. The first session addresses the understanding of design for behaviour change frameworks, methods and artefacts. The second session discusses the different perspectives of researchers, designers and users concerning design for behaviour change. In this way, the strand explores the theoretical and practical challenges of design for behaviour change, progressing from generic understandings to specific applications, from systems thinking to user experience.

**Keywords:** design for behaviour change, framework, method, co-design

### 1. Introduction to the Design for Behaviour Change SIG Strand

The UK as well as many other countries in the world face major environmental, health, social and economic challenges today. Design for behaviour change (DfBC) is seen as a potent way to tackle some of these challenges. Already, individual examples of DfBC appear to have much impact, enabling us to recycle (European Environmental Agency, 2014), to use energy more efficiently (Stephenson et al 2010), to comply with speed limits (Elliott and Armitage 2009), to increase our exercise patterns (Fanning et al 2012), and to change the way we think about social interaction (Niedderer 2007).

The 'Design for Behaviour Change' SIG takes a broad focus on the understanding, theories, mechanisms and applications of design for behavior change in the widest sense across the



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various domains of design and its applications, such as health, safety, sustainability and social issues. This broad focus is necessary for three reasons. First, despite design's clear influence on human behaviour, overall the field of DfBC is still comparatively little understood: it is still fragmented and limited frameworks exist for its effective implementation in professional and public contexts. Second, inspiring as some of the successful examples of DfBC may be, they are not transparent, and therefore have not led to a coherent understanding of how DfBC methods can be used to lead to effective solutions. Third, and in an extension of the second reason above, there is as yet insufficient evidence that DfBC theories work in practice. Whilst there are several examples of where behaviour modification has occurred in a range of industrial and commercial environments together with social scenarios, the link between the behavioural modification and the design strategy has never been robustly researched. However, such an understanding is important because design can affect behaviour change both intentionally and unintentionally. Many designs have not been created to specifically and intentionally alter behaviours, nevertheless, they can create large-scale behavioural change with both positive and negative consequences. For example, mobile phones and computers have transformed the speed, social code and mediums used to communicate. While the increased ability to communicate is generally seen as positive, it is acknowledged that they may cause an increase in stress levels with a wide range of health impacts (Ilstedt 2003), cause a nuisance (e.g. talking on your mobile phone in public) or present a safety hazard (e.g. texting while driving, Srivastava 2005). Covering such divergent fields and problems, one of the core challenges is to create a coherent understanding of practices and approaches relating to DfBC. Emerging approaches range from theoretical understanding and frameworks to guidelines, methods and hands-on toolkits to help designers to design for behavior change. Underpinning theory stems originally from the behavioural and social sciences and is being increasingly adopted and adapted to build genuine design frameworks and theories for behaviour change. (e.g. Clune 2010; Ludden and Hekkert 2014; Niedderer 2014). Also a number of guidelines and tools have been emerged in the design research field that introduce behavioural theories and make them accessible and usable for designers (e.g. Dolan et al 2012; Dorresteijn 2012; Lockton et al 2013).

A review by Niedderer et al (2014) has indicated that while there have been a number of approaches emerging over the last ten years, at present, these remain fragmented and disconnected, perhaps because of differences in domain specific language and practices, and in spite of many similarities between such approaches. The result of this is that there is a replication of work in different design domains and in different areas of application. The review has further found that there is a growing range of case studies that together outline the possible use and application of theories and tools. However, the adoption of tools is not as widespread as it could be. This appears to be partly due to issues of awareness, and partly due to a lack of accessible examples that allow for easy understanding adoption in practice. Current examples from design practice are often reported from a marketing perspective, rather than giving the detail required to enable sound management decisions and thus

foster managerial commitment, or for other designers to be able to follow and adopt practices from such examples (Niedderer et al 2014). In short, the lack of systematic reporting has created a lack of and strong need for sound evidence based examples to enable adoption and practical use of the available tools.

In response to this need, the Design for Behaviour Change SIG at the DRS2016 conference brings together 8 papers in two sessions that contribute to the knowledge gap sketched out above. While the papers of the first session are addressing the theoretical understanding of design for behaviour change, the second session changes the focus onto the complexities of an interdisciplinary design process and the role of the user within the design process, including diversity and risk perceptions.

The first session (Design for Behaviour Change SIG - Contexts and Frameworks) is concerned with the development of principles, frameworks and methods, as well as their application in novel contexts. Contributions consider the adaptation of Darnton's Nine Principles in a sustainable context; and the categorization of artefact-related aspects and the artefacts designed to facilitate such changes. The discussions of this session further consider the role of design for behaviour change in the context of the circular economy; and the application of design for behavior change through case studies to illustrate how theory can inform relevant methods development.

The second session (Design for Behaviour Change SIG – Process and Experience) focuses on the experience of both researchers/designers and users in the process of designing for behavior change, considering issues of agency, diversity and risk. Contributions address on the one hand the challenges of inter disciplinary working for designers and researchers: they consider scientific divides and experiences in an aim to integrate design research and the behavioural sciences; and they review co-design practices and challenges of knowledge sharing as well as the need to build trust. On the other hand, user experiences are key to successful behavior change: the need to take account of user diversity is discussed with regard to sustainable driving styles, introducing the idea of user orientation maps. Finally, the importance of communication of risk is assessed as a basis for successful behavior change.

In this way, the two sessions of the strand explore the theoretical and practical challenges of design for behaviour change progressing from generic understandings to specific applications, from systems thinking to user experience. Several contributions also explore the cross-disciplinary application and challenges of design for behaviour change. Characteristic for all submissions is their aim for practical application to make a change in the world. Through its theoretical and practical discussions, the DfBC SIG session aims to contribute a small piece towards closing the knowledge gap of our understanding of the use and application of design for behavior change, and to help build a more holistic understanding and approach to design for behavior change.

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