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Design for Behaviour Change: Taking the Long View Fast

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Editorial: Design for behaviour change: Taking the long view fast

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Abstract: The Design for Behaviour Change Group was established in 2014 and seeks to promote knowledge, understanding and action in how to improve sustainable social and environmental change. It researches ways in which design can support ethical and responsible behaviour change to achieve these goals. The current strand for DRS2022 explores methods to address recent opportunities in the light of environmental and health challenges.

Keywords: behaviour change; design; ethics; health; mental health; sustainability

1. Behaviour change: opportunities and challenges

Design for Behaviour Change (DfBC) focuses on how design can support and offer ethical and practical solutions for addressing the big challenges in society and our environment, from climate change and threats to biodiversity to pandemics and mental health. The mounting weather, health and other catastrophes over recent years indicate that change is needed. Such change needs to encompass changes in perspective and corresponding approaches as well as their practical implementation to achieve essential and lasting change, in short, all aspects of behavioural change and its physical manifestation through design. Two of the key challenges in behaviour change pertain to health and health-related behaviours, and to views and approaches of sustainability. Tree (2017) demonstrates the integral relationship between humans, animals, plants, their environment and health. Where one deteriorates, the other suffers and vice versa. This is true, both for physical and mental health. If the soil is

depleted, our food supplies – animals and plants – will deteriorate, and our health will suffer. If we encroach on animal's territories diseases can be transferred and spread unpredictably. Whereas a healthy natural environment benefits both physical and mental health.

These challenges require a change in how people think about, and behave towards, themselves, others and the environment. The question frequently asked is how to bring about these much-needed changes, what is considered desirable change and by whom. Policy makers and politicians, businesses, professionals, educators, parents and young people alike are looking for answers to these questions and for clear, practical advice and solutions that allow them to take decisive action. Existing approaches include regulation to eliminate or restrict choice, changing the physical environment in which choices are made, and tools to guide people through the decision-making process (House of Lords, 2011). The mindsets and methods vary between approaches, and each has different ethical implications for the rights and responsibilities of individuals, society (Niedderer, Clune & Ludden, 2017) as well as nature (Tree, 2017). For example, too often behaviour change is used for commercial or political gain that is not necessarily in the interest of a holistic environmental, social and economic sustainable view, but rather benefits individuals whether these be politicians or companies promoting smoking, fossil fuel usage or simply competitive advantage at the expense of a sustainable society.

Established behaviour change approaches therefore have been criticised in recent times, with scientists and practitioners arguing that, firstly, current thinking systematically overlooks behaviours with high potential impact (Nielsen et al, 2021a); secondly, current interventions are more often than not aimed at those who need them least, neglecting both priority groups who could benefit greatly (Schütz et al, 2021) and groups whose behaviour change would be most beneficial for planetary health (Nielsen et al, 2021b); and thirdly, there is a debate about which targets interventions and theory should be aimed at, i.e. whether to focus on changing individuals' behaviours or on holistic cultural change (Tröger et al, 2021). The latter in particular raises questions about the nature of change: whether change is implemented on a voluntary basis appealing to people's personal responsibilities; whether it requires legislation to promote (carrot) or restrict (stick) certain actions and behaviours; whether any change suggested is on a conscious level or lacking awareness (persuasive, nudge), or even on a coercive level. These issues indicate that behaviour change can offer great benefits, but they also raise ethical issues regarding the implementation of behaviour change.

2. Designing for behaviour change

Behaviour change is fundamental to the effective positive impact on human wellbeing, the environment and the many pressing issues facing our society. 'Behaviour change' is defined as coordinated sets of activities designed to change a specific behaviour pattern (Michie et.al, 2011). Designing for behaviour change involves measuring and observing these behaviour patterns and creating new solutions. Interventions can include services and products or

frameworks to bring about the change. Design therefore plays a key role in the much-needed transition in the field of behavioural change, supporting people and organisations to change their behaviour towards better health and sustainability. Given the global scale of the challenges that we are experiencing in the last decade or so, we are only starting to understand the full potential of design. Understanding the means and implications of design for behaviour change more fully is therefore pivotal for its effective and ethical implementation, and this is the aim of the Design for Behaviour Change group.

Because of the complexity of the challenges, they require consideration of the ethical and political consequences of intervening in current praxis, such as empowerment of population groups who are most affected by health discrepancies as well as climate change, and who are often marginalised. Furthermore, there are challenges of efficacy: how do we know what works, and what works best, and how can we design solutions that engage and support, especially for those who need it most? Finally, in practice, work in this field is often interdisciplinary. What unique contribution does design (research) bring to a field which already encompasses a plethora of research methods and world views? How can design (research) best take its place among other disciplines, and create synergy when working together with behavioural, cognitive, medical, STEM, and computer sciences?

The four papers selected for presentation in the Design for Behavioural Change SIG strand at DRS2022 reflect the unique role of design in fostering behaviour change. One such role concerns the phase in which theoretical concepts and insights from preliminary user research are operationalized into designs for practical prototypes. This phase offers opportunities for research into factors that affect uptake, engagement, and efficacy. An example of such research is the paper *Manta and Cactaceae – Rehabilitative smartphone accessories for people with chronic mild stroke impairments.* The paper explores how an object attached to a smartphone can evoke behaviour change and contribute to the initiation of use of affected arms of people rehabilitating after stroke. Everyday objects such as smartphones can play a role in the rehabilitation process, especially when leaving the hospital and continuing rehabilitation at home, but the paper shows that even with a well-researched evidence base to inform the prototypes, it is when insights are translated into workable prototypes, we have the opportunity to learn what really drives behavioural change. In the case of this paper, to find out that the prototypes did not elicit the desired persuasion or coercion in the participants. The results revealed how implicit patterns of everyday smartphone use affects the usefulness of smartphones as rehabilitory devices, and so provides much needed information for the design of the next generation of these devices.

The paper *Designing appropriate things: an experiential perspective on the effectiveness of artefacts in contributing to behaviour change* further elaborates on the theme of operationalisation of behaviour change concepts into working prototypes. The paper introduces the concept of appropriateness of a designed prototype, which describes the fit of a designed artefact to the user and the use context. Appropriateness may relate to perceived efficacy,

but also consists of ethical, moral, and contextual components. This framework informs consideration of why some operationalisations of behavioural theoretical concepts, for some individuals, lead to lasting engagement with the designed artefacts, while other designs fail.

Design is also well-positioned to analyse and reflect upon the way others operationalise concepts towards behaviour change. The paper *Reflection During Goal Setting: An Analysis of Popular Personal Informatics Apps* is a case in point. The paper looks into the way commercial apps help people set goals towards behaviour change. The process of goal setting is well-researched and a broad evidence base exists to inform the implementation of goal setting in digital health artefacts. One key element is reflection. However, most of the apps currently available to support people in behavioural change, do not give people the opportunity to reflect on their goals, their feasibility and their desirability. The paper provides four strategies to do so.

Invisible disabilities, such as mental illnesses, are associated with stereotypes that translate into specific human behaviour, which could be discriminatory. Visual communication is a strong medium, which when used correctly can create positive impact in society. However, some visual images, such as the 'headclutcher' used to represent people and their mental illness, can contribute to unfounded beliefs and stereotypes. The paper *Are stereotypes, such as the 'headclutcher', in stock images for mental illness stigmatizing?* questions the stereotypes apparent in stock images representing mental illness and discusses the effect these have on associated stigma. The paper demonstrates that readily available imagery propagates damaging stereotypical views of people with mental illness. The author suggests that editors should be aware of the consequences of using inappropriate stock images in the publication and care needs to be taken to test these images before putting them out for public consumption. Mental illness should be presented in a positive light rather than in a contrived manner. Finally, more research is required in critical examination of existing images depicting mental illness available in public domain.

3. Conclusion

Together, the four papers in the Design for Behavioural Change SIG strand of DRS2022 show the diversity of design research in this domain, but also a current focus on health concerns and on developing methods for development, analysis and evaluation of interventions.

To further the field, we need to develop a stronger theoretical basis as well as its use in implementating and validating the design of actual products and services in real world settings. The papers in the SIG this year do just that while sketching out the questions that lay ahead.

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