

Technical University of Denmark



The placebo and design research

Cash, Philip

Published in:
The Design Society Newsletter

Publication date:
2012

[Link back to DTU Orbit](#)

Citation (APA):
Cash, P. (2012). The placebo and design research. The Design Society Newsletter, 7(1), 7-8.

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

The placebo and design research

Placebos are an important means of experimental control; however, they are underused in design research. A placebo is an inert simulacrum of an experimental intervention and is used chiefly to control for experimental effects.

The placebo's key role in the control of experimental effects has allowed the placebo to become a gold standard of research practice in deterministic fields such as medicine. Additionally, placebos are used in behavioural psychology, education and healthcare to provide control for a wide range of experimental interventions.

Although design research has a variety of research foci, designer behaviour is a core research area within the field. However, despite the crossover into our discipline of many other behavioural research techniques placebos have been neglected.

The placebo is not easy to use by any means; nevertheless it can be extremely valuable for taking design research experimentation to the next level in terms of rigour, as illustrated below. So, what obstacles must the researcher overcome when using to the placebo for the first time?

1. What would a design research placebo be?
2. How can a researcher go about designing a placebo?
3. How can the placebo be used and also demonstrated as a successful control?

Question 1: The main challenge here is escaping the trap of seeking a deterministic placebo. Human-centric research – in particular that looking at non-tangible processes – is currently not deterministic (and may never be). As such, your placebo is unlikely to be as simple as a sugar pill that can be categorically stated as being inert. In behavioural research it is more likely that the placebo will take the form of some sort of complex intervention designed to be (but not guaranteed until tested) inert. Let's examine two examples (A and B):

A *Intervention:* A specific cognitive self-awareness tool administered through one-to-one tuition with the participant. *Placebo:* Non-specific training of personal effectiveness excluding the specific tool, again administered through one-to-one tuition.

B *Intervention:* A set of specific ideation stimuli focused on a particular aspect of the design. *Placebo:* A set of non-specific ideation stimuli administered in the same manner.

As always the case the placebo is a non-trivial part of the study and requires design with regard to the specific hypothesis and context of the study intervention. A second more troubling point (from an engineer's deterministic perspective) is that these placebos are inert only with regard to the specific hypothesis and will therefore have some effect. However, through measuring this effect it is possible for the researcher to account for the major experimental effects and thus identify the true impact of their specific intervention.

Question 2: This is a more difficult question to answer because it depends to a large extent on the type of hypothesis being tested. For

the purposes of this article the process can be summarised into three steps: 1 – identify the 'active' element of the hypothesis (the cognitive tool in example A); 2 – based on this, identify the 'active' elements in the study intervention (the 1-to-1 cognitive tuition); 3 – Seek to replace the 'active' component with an 'inert' replacement whilst keeping the rest of the intervention the same. Devising this inert replacement can be heavily based on theory but in almost all cases needs thorough testing to identify the most effective placebo.

Question 3: You now have a placebo for your study, but how do you demonstrate that this is effective? Simple, add a standard no-intervention control group. Using this approach you will be presented with three points of comparison: 1 – the active intervention you wish to test; 2 – the placebo; 3 – the no-intervention condition. This will allow you not only to eliminate the superfluous experimental effects caused by your study (subtracting the placebo from the active), but will also allow you to assess the extent of these effects and subsequently improve your experimental methods (subtracting the non-intervention from the placebo).

Finally, how can design researchers per se benefit from the improved experimental rigour offered by placebos? Using both placebo and no-intervention controls could allow the formation of a database of validated placebos available for adoption and adaptation across the field. Further, the improved discrimination possible with placebos supports theory-building by helping to isolate the hypothetically 'active' elements from naturally occurring experimental effects. Ultimately these two key benefits of adopting placebo-based control in experimental design research offer huge potential for increasing research impact both in industry and in the wider research community.

So what does this mean for design research experimentation? Placebos are a powerful and applicable control that can be used to increase rigour, improve validity, aid theory building and increase research impact. Viewed conversely, consider the continued neglect of the placebo: perpetuation of difficulties in developing effective techniques, tools or theory based on experimental data. Ultimately our discipline can no longer ignore placebos. Design research can and should reap the benefits that placebos offer us.

For further details please contact:

Philip Cash

email: P.J.Cash@bath.ac.uk

Philip is a doctoral researcher working with Dr Ben Hicks and Professor Steve Culley in the Department of Mechanical Engineering at the University of Bath. His doctoral research is concerned with characterising the link between industry and laboratory based study of designers.

