

# The preference effect in design concept evaluation



Jan B. Nikander and Lassi A. Liikkanen, Helsinki Institute for Information Technology HIIT, Aalto University, PO Box 15600, FI-00076 Aalto, Finland  
Miko Laakso, Aalto University Design Factory, Aalto University, PO Box 17700, FI-00076 Aalto, Finland

*Concept selection is among the most important activities in new product development, as the consequences of a poor choice may be disastrous at worst. These decisions made in the early phases of design processes are, however, poorly understood from a psychological point of view. This study set out to extend the tradition of experimental decision-making research into the field of design. We investigated whether designers systematically prefer their own ideas in concept evaluation. An experiment with eighteen professional designers was carried out to test the hypothesis. The findings show a systematic preference of self-generated concepts in evaluation tasks. We discuss the implications of this preference effect on design practice and the need for further studies on the topic. © 2014 Elsevier Ltd. All rights reserved.*

*Keywords: design behaviour, decision making, conceptual design, ownership effect in design, protocol analysis*

By nature, human beings have a tendency towards biased decision making and apparent non-normative behaviour (see, e.g., Kahneman & Tversky, 1973, 1979; Stanovich & West, 1998, 2000). We tend to misinterpret statistical data, make decisions according to insufficient evidence, interpret information in a way that confirms our preconceptions and become fixated on information retrieved from memory (Hammond, Keeney, & Raiffa, 1998). It is well accepted that these effects are universal and that they penetrate every field of life. The problems of rational and normative decision making are evident when dealing with the design and development of new products. The problems designers deal with are commonly described as ill-defined or ‘wicked’ problems (Rittel & Webber, 1984), which typically have no definitely correct solutions that can be identified beforehand and the quality of the solutions can often be assessed only in retrospect. Consequently, rational models of problem solving are considered unfit for design (Schön, 1983) with designers being susceptible to a number of psychological pitfalls (Kihlander, 2011).

## Corresponding author:

Jan B. Nikander  
jan.nikander@helsinki.fi

An extensive body of research on decision making in design exists (see, e.g., Ball & Ormerod, 1995; Ball, Lambell, Reed, & Reid, 2001; Ullman, Herling, & Sinton, 1996). These studies have brought forward some instances of non-



[www.elsevier.com/locate/destud](http://www.elsevier.com/locate/destud)  
0142-694X \$ - see front matter *Design Studies* 35 (2014) 473–499  
<http://dx.doi.org/10.1016/j.destud.2014.02.006>  
© 2014 Elsevier Ltd. All rights reserved.

normative behaviour in design decisions (e.g. Cross, 2001; Guindon, 1990; Jansson & Smith, 1991). However, extant work on decision making in design contexts has not applied experimental methods and has been mostly qualitative in nature (for instance, Eastman, 1969; Guindon, 1990; Kant, 1985). This study contributes to a better understanding of the psychological aspects of design by illustrating the persistence of biases in the concept development phase of New Product Development (NPD) using an experimental approach. Specifically we demonstrate how concept evaluations are distorted when designers evaluate a set of concepts including their own designs.

In this paper we first present a model regarding the relationship between different components in concept evaluation and selection, and the importance of concept selection is discussed. Next, we present previous research on non-normative behaviour in design. Third, some relationships between two psychological phenomena, *psychological ownership* (Pierce, Kostova, & Dirks, 2001, 2003) and the *mere ownership bias* (Beggan, 1992; Beggan & Brown, 1994), are mapped. Subsequently, we test the hypothesis that designers favour their own ideas in concept evaluation and selection. We expect that the experienced concept ownership should have an effect on decision making in concept evaluation and selection.

Our results show that designers tend to favour their own concepts in concept evaluation, which has some implications on design practice. We will discuss this along with some suggestions for further research on the preference effect in the paper.

## *1 Concept evaluation and selection*

Decision making is an integral part of the NPD process. Important decisions regarding, for instance, the form and function of the product to be and funding of development projects need to be made, often with insufficient and inaccurate information (Kihlander, 2011; Legardeur, Boujut, & Tiger, 2010). Design decisions made in the early phases of NPD, namely in the concept development phase (e.g. Ulrich & Eppinger, 2003), are critical for the success of the product under development. The decisions made in the concept development phase largely determine the quality, cost, and desirability of the end product (Asiedu & Gu, 1998). Hence failed concept selection decisions can often be compensated only with high redesign costs and increased development time during the later phases of the NPD process (Pahl, Beitz, Feldhusen, & Grote, 2007).

The concept development phase of the NPD process is typically considered as a divergent–convergent activity (cf. Design Council, 2006; Pugh, 1991). Ideally in this approach, a wide set of alternative product ideas or concepts are at first generated (divergence), and then evaluated and eliminated in order to select the best concept or concepts for further development (convergence).

Download English Version:

<https://daneshyari.com/en/article/261567>

Download Persian Version:

<https://daneshyari.com/article/261567>

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