

Investigating design: A comparison of manifest and latent approaches



Philip Cash, Produktionstorvet, Technical University of Denmark, Building 424, Room 122, 2800 Kgs, Lyngby, Denmark

Chris Snider, Department of Mechanical Engineering, University of Bath, BA2 7AY, UK

This paper contributes to the on-going focus on improving design research methods, by exploring and synthesising two key interrelated research approaches – manifest and latent. These approaches are widely used individually in design research, however, this paper represents the first work bringing them together and explicitly investigating their complementarity in the design domain. This is realised using an example artificial observation study. In addition to discussing underlying relationships between the approaches, this paper identifies key opportunities for improving design research methods by more explicitly combining both manifest and latent elements. Finally, a number of combinatory approaches are proposed based on a conceptual framework.
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The designer has formed the focus of a significant amount of design research over the last decades (Frankenberger, Badke-Schaub, & Birkhofer, 1998; Cross, 2007). In order to fully explore this focus researchers have adopted a wide range of perspectives, from the physical activities of designers (Lindahl, 2006; Robinson, 2010) to investigations of their cognitive processes (Kavakli & Gero, 2002; Dong, 2005); a result of which has been the adoption of both manifest (explicit) and latent (implicit) approaches. Despite this difference, manifest and latent approaches are fundamentally linked, and have been compared and integrated in a range of fields in order to improve both quantitative and qualitative research (Hair, Anderson, Tatham, & Black, 1998; Potter & Levine Donnerstein, 1999; Mayring, 2000; Neuendorf, 2002).

One example where the combination of these two perspectives has led to greater insight in the context of design is that of the on-going investigation of novice and expert designers. Consider, for example, the work of Ahmed, Wallace, and Blessing (2003) who highlight the differing mental processes used by experienced and novice designers. Here, a latent approach has been used to reason about what the recorded variables mean in the context of the design process used by the designers and thus differentiate them. In contrast,

Corresponding author:
Philip Cash
pcas@dtu.dk



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Cash, Hicks, and Culley (2013) compare a number of manifest variables associated with design activity – revealing substantial similarity between expert and novice participants. These two works can be synthesised to give a significantly more nuanced understanding of the subject. For example, the baseline elements of the design activity (e.g. information exchange) are almost indistinguishable between experts and novices, yet significant differences remain in both the latent interpretation of a more sophisticated design process and the manifest metric of raw numbers of ideas. In other words, both approaches give complementary yet distinct information, combining to reveal new insight.

Manifest and latent approaches are well established – as exemplified above – and fundamentally and philosophical linked. However, there has been no specific discussion within design research of the relationship between them, or the possible benefits of their explicit synthesis and combination in the design research context. This is despite significant attention and success in other fields, such as in methodological research (Gray & Densten, 1998), and in applied clinical research (Gray & Densten, 1998; Graneheim & Lundman, 2004).

Based on this deficit this paper contributes directly to the on-going focus on exploring and improving design research methods (Cross, 2007; Dorst, 2008; Cash, Elias, Dekoninck, & Culley, 2012). This is realised by describing a conceptual framework for understanding the two approaches – manifest and latent – as complementary, based on an explicit comparative study in the design research domain. In addition to identifying and describing a framework for understanding the underlying relationships between the two approaches, this paper identifies key opportunities for improving design research methods by systematically combining both manifest and latent elements. Finally, the comparison enabled by this approach highlights a number of important areas for future research in the design field.

The next sections give an overview of manifest and latent approaches and describe a conceptual framework linking them (Section 1) before outlining the study and the specific approaches to be used in the comparison (Section 2). Finally, results are presented and discussed (Section 3) and implications and key areas for further research identified (Section 4).

1 Background and comparative framework

Key to the comparison proposed in this paper is differentiating between how manifest and latent approaches give insight into design and bringing them together in a common reference frame – allowing for their explicit synthesis. Despite their fundamental inter-relation, working definitions for predominantly manifest and latent approaches are described here, as this is the context in which they are typically encountered within the literature. Manifest

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