Designing is the Construction of Use Plans

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Abstract In this chapter, I argue for an intentionalist reconstruction of artifact design, called the "use-plan analysis." In it, design crucially involves the construction and communication of a use plan. After presenting an outline of the use-plan analysis, I show that it can be used to accommodate four aspects of the phenomenology of artifact use and design: creative use, serendipity, the unread manual, and unknown designers; and I briefly indicate how the analysis facilitates the evaluation of artifact use and design. From this, I conclude that the use-plan analysis provides a phenomenologically viable, evaluatively useful, intentionalist account of use and design.

1 Introduction

Designing is of vital importance for every human society – from early tool-users to heavily technology-dependent contemporary societies. The products of designing range from skyscrapers to microchips and weather satellites to wicker baskets. Yet accounts of design, especially within analytical philosophy, are as rare as Siberian tigers – and not nearly as actively searched out.

In this contribution, I do not aim to set this straight by giving a complete analysis, let alone a clear-cut definition of designing. Instead, I present a framework for understanding at least one important type of designing, namely that of run-of-the-mill consumer utensils, such as cars and toothbrushes. This use-plan analysis starts from the seemingly trivial observation that designing is, like scientific research or swimming, an activity. One may therefore apply to designing resources drawn from one branch of analytical philosophy, namely philosophy of action. This discipline is mainly concerned with understanding *intentional* actions, i.e., actions that express purposefulness and deliberation.

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P. E. Vermaas et al. (eds.), *Philosophy and Design*.

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I present in section 2 an analysis of designing, and, more cursorily, using, as an intentional action involving *use plans* for material objects. Here I aim at clarity and conciseness, not at completeness. Many details of the use-plan analysis, developed in close cooperation with Pieter Vermaas, and of its application are omitted here and can be found elsewhere (Houkes et al., 2002; Houkes and Vermaas, 2004; Vermaas and Houkes, 2006; Houkes and Vermaas, 2006).

The presentation is followed by a preliminary assessment of the use-plan analysis, again aimed at clarity rather than completeness. In section 3, I show how the use-plan analysis provides a phenomenologically viable framework for understanding designing by accommodating four aspects of artifact design and use. These aspects are presented as criticisms, because they appear to offer grounds for objections against the use-plan analysis, and for accepting alternative accounts. I then show the phenomenological mettle of the use-plan analysis by responding to all four criticisms. Some of these responses show, in addition, the primary advantage of the use-plan analysis, namely that it may be employed to evaluate using and designing. In section 4, I briefly sum up these evaluative features, and I conclude that the use-plan analysis provides a phenomenologically viable, evaluatively useful, intentionalist account of designing.

2 The Use-Plan Analysis of Designing

The use-plan analysis of designing is an action-theoretical account developed by Pieter Vermaas and myself and presented in several publications (Houkes et al., 2002; Houkes and Vermaas, 2004; Vermaas and Houkes, 2006; Houkes and Vermaas, 2006).[1] Central to this analysis is the notion of a use plan for an artifact: a series of actions, including deliberate manipulations of the artifact which are considered by an agent for achieving a certain goal.

As an example, consider a prototypical designed object or artifact: a car. Driving a car is an activity that is typically purposeful and that always involves several contributory actions. These actions may be rather trivial, such as sitting in the driver's seat, or relatively complicated, such as operating the clutch. Yet several such actions are involved in driving a car. Moreover, this set of actions is typically structured as an ordering. Some actions, such as fastening one's seat belt and checking the fuel level, may be taken in any order; other actions, however, such as engaging the clutch and shifting gears, need to be taken in strict succession. Actions when driving a car may be conditional for other actions and conditioned by other actions: one has to open a car door to switch on the radio, which in turn enables the selection of a different radio station. That the actions comprised by driving are structured as orderings, partial or complete, and by conditionals means that driving can be understood in

[1] The use-plan analysis is similar to at least one characterization found in design methodology (Hubka and Eder, 1998) and resembles others (e.g., Roozenburg and Eekels, 1995). For lack of space, neither these similarities nor the equally significant differences will be discussed here.