Philosophy of design: an editorial introduction

Per Galle, Department of Civil Engineering, Technical University of Denmark, Building 116, DK-2800 Lyngby, Denmark

The field of research currently emerging under the name of 'philosophy of design' is presented. Drawing on my experience from editing the present special issue on the philosophy of design, I address two questions which I raise on behalf of the reader: what the philosophy of design is about, and what its use may be. © *2002 Elsevier Science Ltd. All rights reserved.*

The present issue of *Design Studies* is dedicated to the *philosophy of design*. Being the result of, as I hope you'll agree in the end, a *happy* union of philosophy and design research, the philosophy of design is a child of mature parents. For quite some time, their meetings have been few and far between (although frequent enough for me to compile a small bibliography of the ensuing literature[1]). So finding yourself now facing a voluminous bunch of papers about a subject called 'the philosophy of design', it is only fair if you wonder (1) what this is all about, and (2) what it is supposed to be good for. I shall address these two questions in turn, and in so doing, take you on a quick guided tour into the subject. The first question will be considered in relation to a number of themes dealt with in the papers. As for the second question, I shall take a look at it from three vantagepoints: design research, professional design practice, and design education.

1 What is it?

The very youth of the philosophy of design suggests that a definition carved in granite would neither be feasible nor indeed welcome. Like other youngsters, the field is probably better left to grow up of its own accord, without being patronised by too many preconceptions about its future identity. But let's not press the metaphor; it does not answer the question for us anyway.

1 **Galle, P** 'Call for papers: Special issue on the philosophy of design' *Design Studies* Vol 21 (2000) 607–610 (with bibliography 609–610)

One way of answering the question – without carving granite – would be to say merely that the philosophy of design is whatever philosophers of design do. That answer, I admit, may sound altogether too flippant for the pages of a serious journal. And yet it is all I shall offer right now, for it does suggest a good way of approaching the subject. Why? Because if you are new to a subject, a handful of examples is what you need to form an initial intuition about it, and in my experience such intuition (for many of us) is a prerequisite for understanding. After the examples I shall attempt a more general, and I hope more satisfactory, answer to the question of what the philosophy of design is about.

First, however, a glance at the author affiliations of the papers that follow, will reveal that some but not all philosophers of design are philosophers by profession. It is an essential characteristic of the philosophy of design that it is cross-disciplinary. Authors who write about it have varied backgrounds; some are philosophers; others come from research, practice, or teaching of design. Having a formal training in both philosophy and design is the exception rather than the rule. So in a sense, in this field most of us are half amateurs. By this I am *not* suggesting that philosophers of design are charlatans; only that presumably they have more to learn from each other, and more to offer in return, than people in more homogeneous fields of research.

What is it that philosophers of design do, then? Well, they think and write about various themes, a sample of which I have extracted from the papers in the present issue of *Design Studies*. The sample themes are listed below, together with brief summaries of how they are dealt with in the papers. Though I have tried thereby to highlight common features of the papers, and ways in which they supplement each other, my intention is not to summarise entire papers (that's what the abstracts are for).

- *Conceptualisations of design.* In his paper, *Love* complains that the word 'design' and its derivatives 'designing' and 'designs', are being used in a rather watered-down sense in the literature. He urges that all key concepts by which we seek to understand design(ing) should be chosen with greater care. As the corner-stone of a large-scale theoretical project (see below) he proposes a particular conceptualisation of designing itself as a primary human function on a par with thinking and feeling. As regards conceptual awareness and attention to definitional detail, *Houkes, Vermaas, Dorst & de Vries* have no problem in meeting the high standards set by Love; and they, too, suggest a definition of design(ing). In their view, it is conceived of as a particular type of action, which, in turn, is described in terms of plans, intentions, and practical reasoning. Artefact design is understood as nested into a larger

process of plan design which aims at establishing the intended *use* of the artefact in question.

- *Methodology of design*. In one section of their paper, *Houkes, Vermaas, Dorst & de Vries* show how their action-theoretical framework for use and design of artefacts can be used methodologically for revealing certain shortcomings of a particular design method. At a more general level, *Kroes* contends that design methodology is strikingly normative and process oriented, as opposed to the methodology of science, which he sees as descriptive and product oriented. *Bamford* is also concerned with issues of methodology of design versus science, but does not focus on any such differences. Instead he argues, like other thinkers before him, that Popper's Conjecture-Test (alias Conjecture-Analysis) conceptualisation of scientific method is applicable to (architectural) design. Additionally, however, he makes a case for rejecting Popper's view of what constitutes knowledge, at least as far as design is concerned.

- *Criteria for quality in design*. For design methodology to be taken seriously as regards its 'normative stance towards design processes' (its more or less explicit claim to improve them through prescription), *Kroes* contends that it ought to 'establish some criteria for the quality, the success and failure, of design processes'. Taking a metaphysical rather than methodological approach to design, *Trott* also perceives a lack of criteria for quality in design ('standards of excellence' as she calls them). Unlike many other philosophers, she provides empirical evidence for her contention; namely by analysing contemporary examples of architectural criticism. She draws attention to the question of what (kind of thing) an artefact *is*, as determining what criteria to apply in evaluating it. This question suggests Platonic universals (kinds or properties thought of as abstract, hence timeless, entities existing independently of their instances) as a source of such criteria. But Trott is fully aware of the tension between the inherent permanence of such universals, and the changes which physical artefacts, and our use of them, constantly undergo. She expands on the difficult issue of quality by introducing it in a context of artefacts with multiple functions, or ambiguity of kind. Finally, a third approach to quality ('canons of design') is suggested by *Baljon*, who concludes his paper by sketching how a systematic analysis of historical evidence may elucidate the 'mechanisms of fame' at work in architecture.

- *The phenomenology of design*. The paper by *Coyne, Park & Wiszniewski* does not have much in common with the other papers. Most of the paper is about Heidegger's phenomenological notion of 'disclosure', as applied to a design process where a prototype electronic drawing board is being tested. However, there is a somewhat negative connection to the previous theme of quality criteria for design (its success and failure).

For Coyne et al. felt too constrained by standard Popperian empiricism, with its talk of success and failure, and that is why they adopted their richer terminology of phenomenological analysis.

- *Designers bridging the gap between function and structure of an arte-fact*. A further point made by *Kroes* is that insights about design processes may be derived from the nature of artefacts; in particular by exploring what he and others call *the dual nature of technical artefacts*. On the one hand, technical artefacts are physical objects with a structure; on the other hand they are intentional objects with a function. Intriguingly, artefacts cannot be described exhaustively within either the physical or the intentional conceptualisation, hence the contention that they have a 'dual nature'. (This brings Niels Bohr's Principle of Complementarity to mind; electrons understood partly as waves and partly as particles, but not fully as either.) In his paper, Kroes notes that designers obviously manage to bridge the gap between the two conceptualisations, but that philosophically, 'it is not clear how these two are related to each other and how it is possible to go from one conceptualisation to the other'. *Houkes, Vermaas, Dorst & de Vries* (working with Kroes on a common project) go some of the way towards resolving this issue. They chart in detail a sequence of actions by which a designer proceeds from a client's wish to bring about a certain goal state, all the way through to specifying the physical structure of artefacts whose function, when properly *used*, is to bring about that goal state. *Bucciarelli* raises the same question of how designers manage to go from function to structure. Whereas the perspective of Houkes et al. is that of a single designer, Bucciarelli considers the question in a social context of collaborative (engineering) design. This brings communication to the fore in his analysis, and leads him to conclude that language, in a suitably broadened sense, is what enables designers to bridge function and structure.

- *Negotiation and persuasion in collaborative design*. Another concern of *Bucciarelli*'s is how members of a multi-disciplinary design team, each speaking the language of their discipline, manage to converge on a solution. He has severe doubts about the practical feasibility of delegating independent sub-tasks to participants. Drawing on Quine's thesis of indeterminacy of translation, he also rejects the possibility of 'strictly rational, instrumental methods for reconciling the differences', or a single 'over-arching' shared language (a technical *lingua franca*, as we might call it). Instead, he argues, designers make do with a much more limited language of negotiation, using sketches, bar charts, mock-ups, acronyms, etc. as means of expression. These, it seems, are sufficient for designers to co-ordinate their more private discipline-specific views. *Besteliu & Doevendans* write about the planning and design of an entire

city, a collaborative design process *par excellence*; one which, on the face of it, is very different from Bucciarelli's engineering design. And yet they, too, reject one way of reconciling the multiplicity of views, while endorsing another. What they reject is 'modernism's attempt at a deterministic control of the city' ('patterns of thought modelled on science' not unlike Bucciarelli's 'strictly rational, instrumental methods'), and what they see as the more viable alternative is a weakened form of determinism that 'makes room for the aesthetic and rhetorical' (somewhat in parallel to Buccirelli's design negotiations).

- *Paradigm shifts and history of design thinking*. The paper by *Bestelieu & Doevendans* can be read as a historical description of the transition from 'modernity' to 'post-modernity' in urban planning and design thinking. The study of changes or even paradigm shifts in thought patterns, is also a significant theme in *Bamford* who embeds his analysis of Popperian influence on design thinking in a broader history of method, tracing certain ideas as far back as to the 17th century. Whereas the two papers just discussed have a clear emphasis on the history of methods or theories of design, *Baljon* is interested in the history of design itself, as manifested in architecture. He argues that such history, rather than theory, is what informs actual design.

- *Metatheory of design*. However, the importance for design which *Baljon* accords its history, makes him dedicate a large portion of his discussion to a philosophical account of history itself. His view of design is thus a fairly indirect one; we might characterise it as metatheoretical, or perhaps more appropriately as metahistorical. At least with respect to the high level of abstraction involved when theorising about theory, Baljon's paper resembles that by *Love*. Driven by the vision of 'a unified body of knowledge and theory about designing and designs', Love explores what such a body would be like. He suggests a system of research areas to be addressed, discusses the demarcation of designing from other fields of knowledge, and offers guidelines for defining key concepts. All this amounts to a highly abstract, yet in some respects quite operational, theory of design theory. What he claims to have achieved is 'a foundation for research and theory making about designing and designs and a coherent cross-disciplinary body of knowledge that does not overlap with other disciplines'. Love is aware, of course, that erecting the proposed edifice of unified theory on his foundation may meet certain practical difficulties. Perhaps *Bucciarelli*'s reasons for not believing in a technical *lingua franca*, or the apparent complementarity of the physical and intentional conceptualisation of artefacts (*Kroes*), should be taken as early warnings that other difficulties are lurking?

What the themes reviewed above have in common, is that they are all

aspects of design, and insights about them were obtained by rational reflection rather than empirical observation (though reflections were in some cases based on empirical data). Moreover, it seems that these insights could not have been gained by anything but such reflection; common empirical methods of design research, such as protocol analysis, would have been of little help. Rational reflection, and the cultivation of such argumentative power and conceptual awareness as it takes, is the business of philosophy as I understand it. If we can agree on this, we can probably also agree on characterising the philosophy of design straightforwardly as *the pursuit of insights about design by philosophical means*. That nothing has been unduly carved in granite by this, follows from the fact that the question of what precisely philosophy is, remains itself a philosophical problem.

2 *What's the use?*

The second question was, 'What is the *use* of the philosophy of design?'. If we agree to see insight as an end in itself, the answer is fairly obvious, given the above description. In that case the philosophy of design is useful simply because it offers us insights about design which we could not obtain otherwise.

To a researcher, the idea of pursuing insight for its own sake should be familiar and not in need of much justification. Suffice it therefore to return for a moment to the function – structure distinction discussed by Kroes and others. Suppose they are right about 'the dual nature of technical artefacts' (as I think they are); that indeed there is a functional–intentional view of artefacts just as necessary to understand them as the structural–physical view. The latter has been explored intensely by physics and its more application oriented cousin, engineering science, with mathematics as a *sine qua non* for both. Should the impressive results compiled in this way over the centuries, forever keep us from exploring the other view, the functional–intentional view, by whatever means will be offered by the philosophy of design?

Outside the circles of research, the desire for insight may need a little more elaboration and justification. So borrowing and modifying a formulation by Wartofsky[2], I would suggest that, as a major *raison d'être*, '[the philosophy of design] serves the end of helping, guiding, suggesting how the [designer] comes to *understand* what he is doing, and not simply how he comes to *do* what he is doing' [see note 1]. This coming to *understand what one is doing*, rather than just *understanding how to do it* is an insight about design of the kind I have been talking about, and which I believe can only be pursued by philosophical means, as offered by the philosophy of design. And such understanding, I would contend, is a valuable asset for designers.

2 Wartofsky, M W 'Metaphysics as heuristic for science' in **R S Cohen and M W Wartofsky** (eds) *Models. Representation and the scientific understanding*, D. Reidel, Dordrecht (1979) pp 40–89

And yet there may be healthily hard-nosed people outside the ivory towers of academia who find that it takes more to convince them than anaemic appeals to 'insight'. 'Does your 'insights about design' help us improve our products, increase our share of the market, or boost the productivity of industry?', such people might ask. If you are one of them, don't expect me to answer 'yes, they do'. No-one can seriously make such promises on behalf of an emerging field of research. Try instead to consider the *negation* of my claim: Would you be prepared to tell professional designers working for you, that understanding *how* to do their job is all they need, while understanding *what* they are doing is a waste of time? To me, that does not seem the kind of thing to tell employees whom one hopes to motivate and enable to improve one's products, increase one's share of the market, or boost the productivity of industry.

But, although one should not become too much of an instrumentalist about philosophy, it is legitimate to ask if knowledge of the philosophy of design will enable designers to do better designs. I do not think there is a *direct* causal connection between such knowledge and the quality of the designs (although, as we saw, the issue of quality is one that occupies philosophers of design, and some day they may come up with insights of direct instrumental value); but the philosophical insight into their profession may enable designers to take a well-founded critical stance towards what they are doing, and may give them a conceptual and verbal tool kit *useful for thinking* about how to improve the practice of their profession.

For similar reasons, some philosophical understanding of *what* they will be doing may be an important supplementary qualification for the *students* of design professions (engineering, architecture etc.). And last but not least, in the educational setting one should not shun the additional *motivating effect* that learning elements of the philosophy of design may have on students. To a student of engineering, for example, I should think there is a difference between (a) thinking of yourself as someone learning how to use scientific results in solving technical problems (which is perfectly respectable, of course), and (b) thinking of yourself as someone who is *also* a prospective creative designer of artefacts, someone capable of bridging function and structure using your knowledge of both; and someone who is able to lean back in quiet moments and reflect on this whole fascinating process of design.

Those days of innocence are long gone when young people could marvel at the wonders of technological progress, and feel heroic when growing up to make their own contribution. But mastering the design of technical artefacts in a delicate world balanced between the threats and promises of

technology, is a wonderful thing. So let us teach our students to do it, let us give them the philosophical means of insight into what they are doing, and let us encourage them to be proud of what they see.

Acknowledgements

Note

1 In the essay from which the passage stems, Wartofsky argued that metaphysics is a heuristic for scientific research and theory formation, not only as a matter of historical fact, but 'inescapably'. On p. 73, he concludes an argument by the passage I borrowed: 'Thus, I am talking about metaphysics as that heuristic which serves the end of helping, guiding, suggesting how the scientist comes to *understand* what he is doing, and not simply how he comes to *do* what he is doing.' The essay should be of interest to philosophers of design, as much of Wartofsky's argument for the relevance of metaphysics to *science* would seem to apply to *design* as well; or perhaps even more to *design research*.