Ontological depth of the designed object from instrumental reason to reflective judgement

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Abstract

This paper states that in order to contribute to epistemology design must clarify its ontological perspective. The act of designing occupies a position fundamentally different from the natural sciences that examine only things or matter and is also beyond the social sciences that deal with people and their relations. In this paper design departs from the relationship of people and objects. It proposes that within the relationship of subjects to objects, of people to things and thus also of designers to the products they design, there are three different ontological positions. A corresponding epistemological position of people and things is to be found in the notion of a material culture. Because things have become aesthetic objects, they are finalities, not instrumentalities, not means to an end. Kant’s notion of the aesthetic judgement shows a train of thought that links to the conceptual aspects of the design process. Design as a material practice condenses, transforms and materializes concepts. These concepts are singular and not universal. It is a perspective not of ‘things made’, but of ‘things in the making’, a discourse of designing itself and diagrammatic in nature. The notion of concept in design is an own level of analogous reasoning.
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Ontological perspectives
Despite years of usability research in product design, design research has not really developed a philosophical understanding of the shift in thinking that has taken place. Usability perhaps correctly shifts the focus of attention of design research away from production to consumption and mirrors a similar shift in the fields of sociology and cultural studies. But the relationship of people and things, subjects and objects, entails more than just a shift of sides. At the same time we witness that objects are increasingly becoming part of what is called a ‘symbolic economy’ or an ‘Erlebnisgesellschaft’. This means we face experiencing subjects that are in the midst of things, in and among objects. Designers thus need to imagine and understand the experience of objects by subjects. This experiencing is much more an act of aesthetic judgement by a singular subject than the cognitive reasoning of a universal subject. How does this shift in thinking from universal subject to singular subject take place. It starts with a difference in ontological perspective and in my opinion it would be important for every design research to very carefully look at the ontological position it departs from [1]. This paper postulates that there are three different positions within the relationship of subjects to objects that design is concerned with.

The first ontological perspective is what I would call the Cartesian position of subjects that are (supposedly) in control of objects – the subjects handle purposeful and the objects they create are thought to be meaningless. “The entire problematic of subjects and objects in modern western thought is conventionally, if crudely, traced to Descartes’ ‘cogito’, which sees the world in terms of, on the one hand, human subjects (a mind or consciousness which thinks, knows, believes and ascribes meanings and values to the world) and, on the other hand, objects (the world seen as ‘matter in motion’, as a collection of things which interact, which can be observed and grasped in the form of facts, but which are in and of themselves devoid of subjectivity, of mind or spirit, of meaning or essence).” (Slater 1997: 101). This has generally been the predominant view of the making of things – the epistemic view of engineering. For this position knowledge about things is in the first instance instrumental and objective. Things, products are generally without meaning and people are considered to be universal subjects. It is a world of arguments of ‘pure reason’.

Secondly, out of a certain opposition to the Cartesian point of view another position developed, which is perhaps exemplified most radically by Baudrillard. This position acknowledges the fact that probably more of our daily lives is spent interacting with material objects than interacting with other people. “Strictly speaking, the humans of the age of affluence are surrounded not so much by other human beings, as they were in all previous ages, but by objects.” (Baudrillard 1998:25). He turns the Cartesian position around and departs from the fact that in contemporary society the objects now control the subjects. At first this may seem ridiculous, but if we look more carefully a lot speaks for the fact that we in our daily choices of things are perhaps the victims of fashion, maybe without even realising it. This position developed with the growing awareness of the emerging ‘consumer society’. It influenced the ‘cultural’ turn of sociology and the rise of cultural studies to a dominant field of research on ‘consumption’.

This position has a long and complex history and partly reaches back to Hegel’s Phenomenology of Spirit first published in 1807 as it was offering a way out of the dilemma how objects relate to subjects, how human subjects can know the world of objects, how they can assimilate it intellectually, and how they can know that their knowledge is valid. “The profoundly influential insight of Hegel ..., is that the relation between subject and object is in reality dialectical and interrelated, not external and mechanical. It is a relationship or process of mutual constitution of
subject by object and object by subject. Human subjects actively engage with the object world, transforming, moulding and creating it through their intellectual and practical efforts. In working on the world, individuals and societies recreate it in relation to their needs and projects. Their needs – their subjectivity, their meanings for the world – are thus ‘objectivated’, take material form, in the objects they produce.” (Slater 1997: 102-3). The object world is thus human subjectivity made manifest, but in contrast to non-dialectical, positivistic views the world works back on subjects. In transforming the world we also transform ourselves. The world we have made is indeed objective and becomes the new environment in which we live, by which our subjective experiences are formed and in which we define and refine our needs, desires, projects and plans (Slater 1997).

A third position has lately become more manifest, which states that objects and subjects are both meaningful – perhaps on a sort of ‘equal footing’. Within sociology and communication theory, for example, that until recently only dealt with relations between subjects, a repositioning of the artefact seems to be at stake. It concerns the view that interaction and communication are factually not possible without the mediation of things, of objects (Dant 1999; Schiffer 1999). One of the many aspects of this view is that objects in our present condition of society have increasingly become a part of flows – global flows that comprise of information, of images, of money, of goods and of people that are increasingly being connected and that circulate ever faster (Lash and Urry 1994; Castells 1996). What happens is that there is less and less difference between the nature of these flows: from those of objects (goods) to those of subjects (people). Further, the flows of images through the cable networks increasingly represent objects that are made up of signs, no longer symbols. As a consequence their meaning becomes more aesthetic and less cognitive. This is a change in the condition of objects – in the form of their presentation and therefore also of what they represent – and thus of the way they interact with people. There are more and lengthier explanations for this phenomenon, but the consequence is that objects, things, products take on a new dimension, no longer being able to be subsumed as a particular by a universal and knowing subject. The process of subsuming refers to the way people appropriate things and judge them as in Kant’s Critique of Judgement that we will come back to later.

A material culture based on object form
This ontological perspective of meaningful subjects and meaningful objects has an epistemological body of knowledge that corresponds to our position of subjects and objects. For this the author suggests the notion of a material culture based on object form as the culture of our contemporary society that characterizes the relationship of people to things, products and spaces. It answers to the question how we, under modern social conditions, relate to the thing-like nature of much of our social life. Modern consumption has increasingly become a question of object relations: a question of how human and social subjects with needs relate to things in the world, which tend to satisfy them. Obviously design comes into the picture here and it includes the design of material and symbolic goods, services and experiences. Instead of an idea of consumption as ‘subjects using objects’ I argue that the world of things is really culture in its objective form, it is the form that humans have given the world through their mental and material practices.

A major shortcoming of many theories on culture is that they identify culture with a set of objects, such as the arts in themselves, rather than seeing it as an evaluation of the relationship through which objects are constituted as social forms. Culture is always a process and is never reducible to either its object or its subject form (Miller 1987). For this reason this paper is based on the notion of a dynamic relationship of people and objects. In the same way I want to argue for the idea of a process also of the making of things, the design process. People appropriate objects, but how do ideas ‘get into things’ and what happens with them afterwards? [2]
If we accept that things have ideas, intention in them (what we might call the design process) and that the knowledge of the making (what we might call the production process) is embodied in the artefact, the question becomes: How do we get it out, how can we extract it and what form does this extracted intention take? The hypothesis of this paper is that this intention can only be verified through conceptualisation and that the form therefore is conceptual or diagrammatic. Within the design process exists a level of concepts [3]. These concepts are part of the decision-making process of a project and do not belong to the universality of ‘pure reason’. Instead they are singular, individual concepts that have a similar mode of operating as reflective judgements do for Kant.

Judgement

There is, as we have seen, increasing evidence that a particular object, a product is now judged as an aesthetic experience, as part of an event, by a subject that needs to be singular and make its own choices. As subjects become singular and experiencing, a shift from epistemology (universal knowledge) to ontology (existential meaning) is involved. Epistemology logically entails instrumental rationality, because theorein is the understanding of the natural sciences and positivism. Instrumental rationality is thus the use of the scientific rationality of ‘pure reason’. In the natural sciences and in positivism things and social things are reduced to what are more or less ‘variables’ of Newtonian time-space. The Cartesian ‘I think’ is determined by the universalism of the logical categories. Traditionally the epistemological subject would know things according to these categories of classical logic, but, if we follow Kant, then the experiencing subject needs to know things in terms of the ontological structures proper to things themselves. Therefore Lash (1999) states that the experiencing subject is no longer ‘above the world’ in a hierarchical sense of a subject-object relation with things in the world, but is situated in the world ‘among’ objects. Subjects therefore no longer know objects – instead they now experience them. As a consequence the (designed) object gains vastly in status. It comes to take on ontological structure – a structure of meaning. This meaning is not reduced to epistemological and utilitarian functions, but allows the object to be invested with affect, desire, and care, to be lived by and lived with (Lash 1999). For experiencing subjects these objects become finalities, ends in themselves and not instruments, not means to an ends that knowing, universal subjects deal with. Several authors (Lash 1999, Böhme 1999) have lately pointed out how Kant in The Critique of Judgement breaks with the notion of universalist individualism for an idea of freedom based on singular individuality. With The Critique of Judgement there is evidence for a meaning of being through reflexive judgement of objects, of things – in fact through ‘poesis’ [4].

Much has already been said about the limitations of positivistic, instrumental means-ends type thinking for design (see, for example, Nigel Cross: Designerly Ways of Knowing), but in my opinion these positions do not go far enough. This paper postulates that the only way out of theorein and its instrumental rationality, whose logic determines us to be positivist and utilitarian with regard to things and people is through the notion of poesis. Not through praxis and practical reason or its ethics, but through the notion of reflexive judgement that the problem of the located finality in the aesthetic object leads us to. It is judgement and particularly aesthetic judgement that connects us to the kind of conceptual thinking in the decision making of the design process.

Aesthetic judgement

What is judgement according to Kant? A judgement happens every time we think something about something. A ‘judgement’ is a mental act which in some way decides whether a thing is this or that (Burnham 2000). In the Introduction to his Critique of Judgement Kant makes a set of distinctions between different types of judgement. First he draws our attention to determinate judgements, which happens when we encounter something well-known from experience and we have a universal rule, principle or law that we can apply to the situation. A ‘determinate’ judgement is one that has a concept in advance. Other people can come along and use the same ‘concept’ that we applied – it
has a certain universal validity. A second type is ‘indeterminate’ judgement, which occurs, when a situation is rather new and no well-known concept can be applied. It is a judgement that creates the concept in the same act as making the judgement. In fact universal judgements of the first sort are rare, because they never have much to say about the particular detail of our real empirical experiences. Thus we constantly need to develop new (empirical) concepts out of given experiences by ‘indeterminate’ judgements. Once developed others can share these judgements – they have wider validity. Then there are judgements of sensual ‘interest’, concerning for example one’s taste for food. This judgement is entirely subjective and it is only valid for the person who makes it. The next type is teleological judgement. Teleological judgement happens when we judge something to have been produced according to an idea of it, seeing something caused by its telos (purpose). Finally there is aesthetic judgement about things we call ‘beautiful’ (such as art): we do not have a well-known concept in advance and we do not have to form a new concept either, but the judgement takes place by way of feeling. It is as if we are ‘thrown back’ entirely onto our own resources as a thinking subject (Burnham 2000). But these judgements are not entirely subjective – they may have a wider validity; i.e. we can communicate about them. Both teleological and aesthetic judgements are reflective, that means not determined by given concepts and thus do not contribute to a knowledge (of universal subjects).

Kant in his Critique of Judgement is very concerned with the fact how such a judgement can happen and what its legislative principle may be. In this paper we are not. Lakoff and Johnson (1999) particularly criticise Kant’s notion of a priori constructions and deconstruct it. Their point is that in conceptual reasoning our minds operate along metaphors that are embodied in ourselves. The substance of their claim about the metaphorical grounding of cognition in our embodied situation is that conceptual structures resemble perceptual ones in interesting and explanatory ways. Imagination is the place where figurative meaning emerges from perception and metaphor is the place in language where this embodiment can be seen (we use metaphorical terms). This is not in contradiction with the part of Kant’s Critique of Judgement that is interesting for us: that aesthetic judgements are reflective and do not proceed by predetermined concepts. What does Kant have to say to us?

In Kant's ‘Critique of Judgement’ there seems to be a train of thought that we can build upon for a hypothesis of the design process. It mainly is the part, where the gap between pure reason and practical reason is referred to and how in aesthetic judgement the faculty of judgement links with reason. Between the epistemological question ‘what can I know?’ of theorein and the ethical ‘what should I do?’ of practical reason is no bridge except by the position of judgement that asks ‘what may I hope for?’ Kant states that it bridges that in an analogical way (through an ‘as if’ position). Thus the ‘singular’ individual no longer determined can engage in thoughts of a more bricolaging nature in the making of things. This is similar to the bridge that concepts in the design process need to make between the cognitive analytical level that belongs to the problem definition and the resolution of that problem as final form. No ethics or practical reasoning show a way out and in my opinion neither do any references to the praxis of design either.

The design process
Thus the idea of design as a material practice - an activity that works in and among the world of things – is also one that condenses, transforms and materializes concepts. This paper argues for a notion of concept as the need for an idea within the field of professional imagination that guides the concrete decision-making process in design projects, which keeps the design together – the concept as a generator of form. But this idea is not final or finished form (yet). Different disciplines operate with different ranges of imagination. Design imagination is fundamentally different from sociological or historical imagination as it has to operate ‘prescriptively’, as it has to generate form, not just descriptively, not just describe existing things. Consequently within the world of objects
exists a rupture between descriptive (design products) and prescriptive (design process) modes of operation. In other words descriptive discourse in design (i.e. existing design history and theory) has not really led to design methods. My question is: what would it mean for design history and theory to think in relation not to ‘things made’ but to ‘things in the making’? [5]

This perspective of ‘things in the making’ is in this paper understood:
− as a discourse of the process of designing itself (as ‘prescriptive’ mode)
− as connected to a conceptual diagrammatic level of designing

The question that follows is: does an internal discourse of design, of projects and how they were thought exist? Peter Eisenman addresses this in the field of architecture and calls it architecture’s ‘interiority’. “Rarely has architecture theoretically examined its own discourse, its interiority. My work on the diagram is one such examination. It concerns the possibility that architecture can manifest itself, manifest its own interiority in a realized building. The diagram is part of a process that intends to open architecture to its own discourse, to its own rhetoric ….” (Eisenman 1999, 37)

Within a design process the notion of concept may be understood as the generation of a personal, singular idea illustrated by analogies, diagrams, sketches etc. that guide the design process. It helps to make coherent decisions by the designers. These concepts are increasingly being illustrated consciously, but in some cases need to be reconstructed analytically. In the contemporary design process they are often communicated and discussed in an early stage of the project.

**Diagrammatic reasoning**

In contemporary design processes a conceptual level seems to exist and it operates with diagrams as an intermediary for the negotiation of form. Noting how radically our reasoning differs from the rigorous standards of formal logic, we call it intuitive (Simon 1995). In this context I would like to introduce a scheme that represents the design process as a diagonal movement from immaterial thoughts originating as cultural, artistic ideas to the production of matter, where these ideas need to meet the requirements of production processes and engineering systems. It identifies three main levels within this diagonal movement that all represent design knowledge and praxis. The relationship between these levels is specific for each project, but may also have generic aspects within the oeuvre of one designer or a ‘school’ of designers. My hypothesis is that even if the design process appears as a fluid connection through all three levels, in reality there are large jumps in the kind of reasoning between these levels. These levels appear as:

− a level of analysis and theory. This is a terrain of cognitive theoretical logic, ‘pure’ reason, instrumental rationality and determinate judgement. This level has grown rapidly in importance. The amount of data that a project is confronted with today show this. Even if we reject the logic of instrumental rationality, it still rules on this level and has to be adopted to as the ‘lingua franca’ of analysis and theory.

− a conceptual level at the edge between the virtual and the real that operates with diagrams as a sort of professional shorthand and that for different reasons (group work, participation) increasingly is developing an own life (generative diagrams, templates etc.). Here reflective judgement rules and instrumental rationality does not. Concepts are connected by analogy, not by pure reason. Within a professional discipline there are specific systems of thought that the concepts will need to relate to.

− a level of final form in which the things or products present themselves in their material form. This has for a great deal been the domain of categories of style and art history.
Although the concept develops out of the analysis of a problem, it does not do so mechanically or automatically [6]. Between analysis and concept in reality a complex ‘creative jump’ occurs. Much of the potential of the diagram as an abstract model (of design) lies between the virtual and the real. The variables in a diagram that emerge from analysis may include both formal and programmatic configurations. A diagram is therefore not so much a thing in itself but a description of potential relationships among elements, not only an abstract model of the way things behave in the world but a map of possible worlds. The diagram has an increased actuality, because professional practice is more and more characterised by providing open-ended solutions through mediating between production and distribution systems and through the participation of new groupings of actors in the design process (for example in mass-customisation).

In the past five years an increased interest in the diagram has led to a series of publications and mentions in conference presentations. In his introduction to Peter Eisenman’s Diagram Diaries Robert Somol (1999) traces the history of the diagram and states about its actuality in architecture that: “In general the fundamental technique and procedure of architectural knowledge has seemingly shifted over the second half of the twentieth century, from the drawing to the diagram.” (Somol 1999: 7). In this conflict it seems as if the conventional drawing is a static tool of the representation of a product (of final form) and the diagram a process tool that is dynamic and flexible. It is particularly this quality of the diagram that points to the kind of thought, the kind of reasoning that it works with and through.
Notes

1 A research needs to answer the question of how its specific research subject relates to the world of theory and knowledge (epistemology), which needs to be based on a statement of what the world must be like (ontology) in order for us to have knowledge of it. Thus the researcher approaches the world (being in the world) with a set of ideas, an ontological framework that specifies a set of questions (epistemology) that are then examined (methodology, analysis) in specific ways (Denzin and Lincoln 1998). In other words in every research there is always an ontological perspective which sees or encapsulates (our being in) the world in a specific sense and there is an epistemological position which suggests that knowledge or evidence of the world can be generated by observing, participating or interpreting certain sources.

2 Dant (1999) provides an interesting view on this question: “The process of cultural appropriation of material things is not reducible either to production or consumption but is to do with a series of types of interactions between people and objects. These interactions with things – touching, making, looking at, talking and reading about, using, storing, maintaining, remaking and so on – are social in that they are learnt and shared within culture. Material objects are physically formed within a culture but are also socially constructed in the ways that they are fitted into routine, everyday practices and ways of life. Culture is embedded and disembedded throughout the life of the object while the processes of production and consumption are organised around economic exchange.”

3 What is a concept generally? Concepts are ideas formed by the process of abstraction and provide categories for storing experience – in our case of projects and their relationship to other projects, their presence in the past. Abstraction is usually defined as the formation of an idea by mental separation from particular instances – in our case abstraction from final project form. Concepts are formed by removing some of the detail of particular instances so that what remains is only the essence of the thing, concentrated on the main, for example, poetic, organizational or technical response to the problem. Concepts make it possible to communicate knowledge and imagination. In addition to allowing to generalize knowledge and imagination and to communicate it to others, concepts give enormous powers of thought. Concepts allow to associate volumes of information (about other projects and cases) with a single idea and to communicate or process this information rapidly whenever we think of it or talk about it. Concepts are often connected by analogy, for example by colour, material, form, type, common experience (such as film, music, literature or bible/religion) etc. (Hatch 1997). It is the ‘conceptual slippage’ of analogical thinking that this paper argues for as the different kind of reasoning necessary for the introduction of the new as a concept for a project.

4 Within the triangle of theorein, praxis and poesis, design research so far has almost always been based on theorein or epistemology and its instrumental reason. Further, a lot of design research increasingly refers to praxis (and its practical reason). This paper focuses not so much on praxis, but on the notion of project and its singularity. It will make a case for the element of poesis and the analogical reasoning of reflective judgement within the design process of a project.

5 This question, first posed by the philosopher William James, was the point of departure for The Pragmatist Imagination conference in May 2000 at Columbia University, New York (Ockman 2000).

6 It is perhaps possible to interpret ‘form follows function’ as a universal concept that operated at an intermediary level between the analysis of functional requirements and the outcome of final form. The problem of such a universal concept is that it works as a ‘modernistic’ meta-narrative of the sort that contemporary postmodernism has rejected. This rejection is a part of a
movement towards a singular individuality of design and also the designer versus the universal judgement and pure and instrumental reason that traditional modernism appealed to.
References


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