Diverse Designing

Sorting Out Function and Intention in Artifacts

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Design describes intellectual activity that differs across disciplines. This chapter argues for differentiation into engineering, architecture, or other types of design before any general conceptualization. Studies about the 'dual nature of artifacts' concern engineering design. The transferability of philosophical concepts from these studies to other fields of design is questionable.

North American house construction, a technological system designed on the wood-rich, nineteenth-century frontier, is a good example that shares features with technical artifacts and others with social artifacts. This technology is analyzed by applying a framework developed by Andrew Feenberg that, in turn, sheds light on generalizations about design in the philosophy of technology.

Starting in the 1800s, the engineering design of material production has been sorted out, and the production of building construction only partly so. Sorting out sounds good, but it comes with a raft of preconditions, predispositions, and predeterminations. Just as a house construction system designed in the nineteenth century brings antiquated design concepts from history into contemporary houses, the understandings of technology that engineering sorted out over the last two centuries, such concepts as function, use, and intention, are smuggling proscriptive versions of these concepts into the twenty-first century.

1 Philosophy of Design, Function, and Use

To expand the philosophical study of technology beyond engineering design this author proposes some philosophical redefinition of terms such as function, use, and intention. Already, critics have suggested that the authors of an empiricist study of artifacts, Peter Kroes and Anthonie Meijers, expand their project to include "artifacts obtained with some technique different from engineering design" (Kroes and Meijers, 2002a; Mitcham, 2002; Hansson, 2002a). Of course, since engineers have sorted out their way of designing, the resulting philosophical definitions are

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more precise. Expansion of these definitions into other design fields adds variability, but allows the philosophical terms to have wider application. Rather than adapting the definitions to things like artist-created artifacts, this chapter takes a more modest approach and expands the concepts to include artifacts with affinities to engineering design, particularly architecture.

Building technology and construction has an imprecise understanding of function, use, and intention, partly because the artifact is complex and the designer is faced with a loose problem that is not easily quantified (Kira, 1976; Rykwert, 1982). There is a wide range of possible technological solutions to building a shelter; decisions about lightness, speed, efficiency, climate, and materials create a complex set of criteria, some even conflict. In our culture, houses have a low threshold of improved function. Try to evaluate "home improvement;" figure out which house performs better than another. What do you measure, how is a newer house "new and improved." Can houses produce an improved sense of personal and social well-being, and if they do, then how do changes in construction techniques affect the spaces around us. While the scale of a house allows easy comprehension, the artifact is socially and technologically complex and analyzing design intent, building function and end use is usually quite difficult. In the twentieth century, engineers, and architects, designed new house construction systems to manufacture "engineered" houses with innovations in production, however they accounted for very little of total housing construction (Wachsmann, 1961). Consistently the parameters and methods of engineering design fall short of resolving this seemingly simple task. Building a house, or engineering the method of building a house, does not fit easily within the more constrained parameters of engineering design, since the outcome must afford a wide range of equivalent solutions, qualitative concepts, and design intentions (Hansson, 2002b). As such, the path of its design development has many possible directions with a wide range of possible solutions. However, this variability, once accounted for in the philosophical concepts of function, use, and intention, might allow discussion of fields of design close to engineering. It also holds the promise of a twenty-first century version of design that includes both the technical and the techno-social aspects of artifacts glossed by engineering.

1.1   Function and Functionality

In this chapter the concept of functionality is added to that of function, usability to that of use, and intentioned to that of intention. Engineers and most twentieth-century technologies have demonstrated that problematizing function is an effective way of operating. They do so by reducing the definition of function efficiently to solve the problem at hand. Broader consequences are unintentional and left unimagined. Rather than expanding the definition of function, this chapter argues for a discussion of functionality. Functionality opens function to a social context. It intends diverse use and appropriation. It designs specifically, but is open-ended. It not only designs function, it designs for functionality promoting the idea that one