

Beyond Inevitability

Emphasizing the Role of Intention and Ethical Responsibility in Engineering Design

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Design is “the first signal of human intention.”
– William McDonough (1993)

Abstract Much of how humans think about their world and their actions in relation to it is governed by the manner of their speaking. In this paper the authors argue that this has an especially significant impact on the work of engineers and their perception of ethical responsibility. A discourse framework governing the actions of engineers which focuses on the idea of technological development tends to lead toward perceptions of technological inevitability, whereas one focusing on the terminology of engineering design enhances perceptions of choice and, consequently, of individual responsibility. Perceptions of responsibility resulting from design focused discourse thus are not limited to narrow safety and production considerations, but include holistic considerations such as aesthetic and environmental factors, as well as considerations of societal implications of design choices. The authors propose that increased focus on design discourse, in both professional and public settings, will enhance a broader sense of ethical responsibility among engineers.

1 Introduction

Engineers usually find it relatively easy to identify issues of professional ethics as they arise in personal relationships and when making individual decisions. It is often more difficult, however, for them to feel responsible for, or even to recognize, the ethical issues associated with technology-based systems and large-scale technologies that are developed by groups and organizations.

These larger-scale forms of technological development, despite the tremendous impact they have on individuals, are typically seen as being out of the control of individuals. Part of the reason for this is that discourse, using technological development as a referent, tends to be dominated by the notion of inevitability and the assumption that the path of technological development is difficult, if not impossible, to control. Discourse about design is related to individuals and focused on the vocabulary of intention; it appears to be based on the assumption that we have

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reasonable control over the shape of our designs and the consequences that will follow from their use; and it conceptualizes design as a process imbued with ethical considerations.

In this chapter we argue that the notions of openness and choice that are reflected in the discourse of design are much more conducive to ethical awareness, reflection, and responsibility than is the notion of inevitability that characterizes the discourse of technological development. It then follows that, if the discourse about technological development can be changed in the vocabulary of engineers to one focused on design, their ability to engage in ethical reflection will be enhanced.

Our analysis is aimed at suggesting ways to move beyond the discourse of inevitability and toward a framework that emphasizes an ideal of individual ethical responsibility in team-based and large-scale engineering design. Specifically, we argue that supplanting the discourse of inevitability will require:

1. recognizing that the robustness of the discourse of inevitability derives from many sources, including the way it resonates with lived experience and its pervasiveness in the popular media, which gives rise to its perceived simplicity and familiarity.
2. developing a compelling discourse of design that is, in turn, based on a sound philosophy of engineering and philosophy of technology.
3. demonstrating that as humans we have choices about the forms of discourse in which we engage and that those choices have significant societal consequences.

In what follows we take a discourse analysis approach, that is, we carefully examine exactly *how* the discourse of technological inevitability functions as a way of gaining insight into the sources of its power and how it might be supplanted.

2 Key Features of the Discourse of Inevitability

The discourse of inevitability regarding technological development pervades popular culture and public discourse about technology and appears in particularly vigorous form in discussions of information and communication technology. It is clearly reflected in the cover headlines of publications such as *Popular Science*, *PC Magazine*, *PC World*, and *Wired*, whose covers are replete with exclamation points, “The Super Power Issue: The Impossible Gets Real!” (*Wired*, August 2003), imperatives, “Go Wireless: It’s Faster & Easier Than Ever” (*PC Magazine*, May 18, 2004), promises, “Live Forever: 7 Easy Steps to Engineered Immortality” (*Popular Science*, January 2005), and offers of competitive advantage or empowerment, “PC Secrets! 15 Easy Ways to Make Your System Do More” (*PC World*, March 2006) and “Build Your Perfect PC: Faster than Dell, Cooler than Apple, Cheaper than Sony” (*PC Magazine*, March 7, 2006). Kroker and Weinstein (1994) concisely summarize the discourse of inevitability in their book *Data Trash: The Theory of the Virtual Class* (1994): “adapt or you’re toast.”