

Avoiding Deterministic Thinking

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Abstract—Efforts to reduce crime and improve urban safety frequently falter because of deterministic thinking. A determinist—you'll meet some here—simplifies reality by explaining results as entirely due to a single, influential factor. Environmental determinists, for example, assure us that they can design out crime with defensible spaces and lots of foot traffic, while ignoring contributory socioeconomic factors. Social determinists call for fairer public policies and doubt that better technologies and urban designs really can make a difference. Technological determinists instead assure us that innovations such as networked video surveillance are imminent and inevitable, regardless of their desirability. Yet they often gloss over unresolved analytical, data sharing, and privacy issues that will delay implementation by years. Advocates of disparate solutions talk past one another.

This paper presents reasons for avoiding the trap of deterministic thinking in urban safety discussions, and ways to do so. In brief, simplified explanations and specialized efforts are necessary for implementing improvements, but so is a balanced view of the big picture. Integrated and coordinated approaches to crime prevention can help bring that big picture into view. Additionally, we need to focus constructive attention on the limits to our solutions, tempering our enthusiasms without inducing paralysis. I mine well-established literatures on determinism in social studies of science and technology, in urban planning, and in decision science for additional useful insights.

Social studies of science and technology have evolved from the technological determinism of Ellul's *Technological Society*, through the critical ethos of Winner's *Autonomous Technology*, to the socioeconomic determinism of Florman's *Civilized Engineer*, and beyond to a recognition that social, economic, political and technological factors interact and intertwine to produce the outcomes we see on the ground. The prescriptive literature currently focuses on better ways to assess technologies, where "better" has both substantive and procedural meanings.

Substantively, we now recognize that new technologies are always embedded in existing sociotechnical systems, that the time scale of change is often slow, that both public policy and private entrepreneurs play key roles in the innovation and diffusion process, that the life cycle stages of an innovation have distinct sectoral and geographical impacts, and that there are always unintended consequences. Procedurally, the votes of consumers in the marketplace are crucial, but strategic financial, political, and legal decisions also affect the success of an innovation. Transparent technology assessment efforts involving lay citizens and experts to characterize unintended

consequences could beneficially supplement old-fashioned market analyses for innovations.

Urban planning emerged as a field from roots in public health, infrastructure development, and urban design, with its early practitioners coming mainly from the ranks of architecture and civil engineering. These planners were typically very design oriented, and as such, they had much faith that their designs could unilaterally improve the human condition. A parallel group of social reformers endorsed the means of planning, albeit for more utopian ends. As the urban renewal experiments of the 1940s-60s unfolded, appreciation grew that larger social and economic forces often constrained or indirectly affected urban design outcomes. In response, as the *Journal of the American Planning Association* has documented, social scientists began to infiltrate the ranks of urban planning professors, and today, urban planning is often seen as a form of applied social science, with a dash of urban design thrown in. In the security dimension, Jacobs' design-oriented prescription for "eyes on the street" now shares planners' attention with Young's social-theoretical call for "differentiated solidarity." The pendulum may have shifted too far away from design, and the planning academy is beginning to redress the balance. Hopkins nicely characterizes the essence of urban planning today as involving interdependent, future-oriented decisions by both public and private interests. In other words, design decisions are always nested within policy decisions and particular cultural, social, political, and economic contexts.

Design, policy analysis, and decision support are all intellectual activities that simplify reality to make problems tractable. The challenge is to simplify appropriately for the decision context. Once again, there are both substantive and procedural aspects to the challenge. Theory and experience prescribe the following: seek broad input early, evaluate a wide range of alternative solutions against multiple criteria, develop synergetic packages of options rather than single solutions, design adaptability into solutions so that they can respond to changing circumstances, and exhibit humility because there is so much we don't know about our world and the preferences of our fellow citizens.

Taken together, these literatures support a skeptical view of any deterministic claims, while acknowledging that we still need to rely on simple models to make practical decisions. I close with specific recommendations for the crime prevention community: expect surprises; build stronger links among the technological, urban design, and social science communities;

and better balance the procedural and substantive dimensions of proposals.

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