

**Code/Space**

**Software and Everyday Life**

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## Preface

It is very difficult to avoid the effects—the work—of software in the world, especially in the developed West, because of the difference it makes to the constitution and practices of everyday life. Indeed, to varying degrees, software conditions our very existence. Living beyond the mediation of software means being apart from collective life: not appearing in government records; not employing any utilities such as water and electricity or banking services; not using the many kinds of household appliances that rely on digital code to control functions, ranging from bathroom scales to washing machines; not watching or taking part in commercial entertainment or recreational activity (e.g., watching television, reading a newspaper); excluding oneself from professional health care, avoiding all manner of everyday activities such as shopping (thereby eluding the significant role of software in barcode systems, computerized cash registers, credit cards, and the like); and not traveling anywhere by any mode of transport (pedestrians are registered on digital surveillance camera networks). In fact, even nonparticipation is often still logged; passivity is as easily monitored by software as activity is.

The means through which this book was brought into being amply demonstrate how so many practices are mediated and augmented by software. It was composed using word processing applications, with drafts e-mailed back and forth between us. When we met to discuss the text face-to-face, we booked plane tickets online with credit cards and traveled through an air travel assemblage that enrolls a complex ecology of software to make safe and affordable flying possible (route scheduling and yield management software, checking in, security screening, aircraft systems, air traffic control). The manuscript was designed and typeset using desktop publishing applications; physically manufactured on a computer-controlled printing press; and marketed, distributed, and tracked using sales management systems. When the book was sold, it was almost certainly done so using either an Internet e-commerce system or a software-driven checkout register, and it is likely that a credit card was used to facilitate the transaction. Even if the book was purchased for cash, there is no escaping the fact that the sale was processed using software, thereby being recorded in the store

inventory and sales database. Revenue for the sale was then credited back to MIT Press accounts, and ultimately, a small percentage was registered electronically against our names for annual payment of author royalties. Of course, you may even be reading it as an e-book, in which case the words you are seeing now are a visible manifestation of the work of software in the world.

Software, then, is having a profound influence on the world. Understanding this ongoing and growing influence, its underlying logics, and long-term implications, requires a thoroughly social and spatial analysis. Software is shaping societal relations and economic processes through the automatic production of space (Thrift and French 2002) that generates new spatialities and the creation of software-sorted or machine-readable geographies that alter the nature of access and governmentality (how societies are organized and governed to fulfill certain aims; Graham 2005). *Code/Space* examines in detail these new spatialities of everyday living and new modes of governance and empowerment through an exploration of the dyadic relationship between software and space: the production of space is increasingly dependent on code, and code is written to produce space—hence our title, *Code/Space*, with the slash symbolically binding together the code and space into one dyadic concept. In so doing, we develop a set of conceptual tools for identifying and understanding these relationships, illustrating our arguments through rich, contemporary empirical material relating to different types of everyday activities that depend on software in varying degrees: traveling, homemaking, and consuming.

The principal concepts we detail are transduction and automated management. Through the concept of transduction, we theorize space and spatialities as ontogenetic in nature—as constantly in a state of becoming. Software, through its technicity—its ability to do work in the world—transduces space, that is, it enables space to unfold in multifarious ways. We formulate the concept of automated management to think through the various ways that new software systems survey, capture, and process information about people and things in automated, automatic, and autonomous ways, making judgments and enacting outcomes algorithmically without human oversight. We are sensitive, however, to the fact that software is not simply deployed to discipline people, that is, act or perform in a way prescribed by the rules encoded in its algorithms; it is at the same time also empowering, bringing into being spaces and social activities that qualitatively improve daily life for many people. These processes of regulation and empowerment are sometimes hard to discern because they are often opaque or else they operate from spaces several steps removed from the places of embodied experience. Nonetheless, given their increasingly widespread deployment, it is essential to tease them out and think them through.

Ultimately *Code/Space* makes the case that software matters. It is extensively and intimately woven into the fabric of people's lives in diverse and significant, though

often banal, ways. Software is thus actively shaping sociospatial organization, processes, and economies, along with discursive and material cultures and individuals' construction of identities and personal meanings. And its effects are set to become increasingly pervasive as more and more everyday practices and tasks are augmented or automated by code. Clearly, trying to understand the nature, roles, and implications of software on the unfolding spatialities of daily life is important. We hope that *Code/Space* is a productive step in that direction.