URBAN SCANNER

TRACKING THE WAYS TECHNOLOGY HAS SHAPED OUR CITIES, SHANNON MATTERN ARGUES FOR A BROADER RECOGNITION OF URBAN DATA.

BY JENNIFER REUT

Technology companies thrive on the gospel of the new, while our most cherished cities are often those with a distinct culture and history. In order to reconcile our seemingly ungovernable appetite for technology with our desire to create lived places that are valued by citizens, we'll need to confront the ways in which many kinds of knowledge networks shape space. In her new book, *Code and Clay, Data and Dirt: Five Thousand Years of Urban Media,* Shannon Mattern, an associate professor in the School of Media Studies at the New School in New York, argues that our cities have always had networks of information that powerfully shaped urban places in ways that far exceed the Internet of things.

This interview has been edited and condensed.

There is this enormous push by technology companies to have certain kinds of technology embedded in city planning. What does a historical context bring to the conversation?

Well, first of all, I think it brings a degree of humility. Much of the innovation engine is based on a kind of willful historical inattention or ignorance. In order to make claims of innovation and disruption, there is an almost purposeful disregard for history.

Another thing that history allows is for us to recognize that there are multiple forms of intelligences and knowledges and community wisdom that are built into cities that have nothing to do with algorithms and the newest technology. It expands our definition of what constitutes technology, to recognize that analog materials are still very much present and pertinent in the urban environment. All these types of things, if we think of technology very liberally, could be counted as technology. History allows us to recognize that there is a wider array of technology shaping urban culture and that there are other kinds of non-algorithm-cized, non-datafied forms of intelligence and things that are worth knowing in the urban landscape also.

How do you see information landscapes differently from other forms of power or other ways of social organizing, such as race, gender, or class? Does information bring a different set of knowledge to understanding the built environment?

BELOW
An image by Michael K. Chen Architecture from Shannon Mattern's book illustrates how data infrastructure shapes the urban landscape.

MICHAEL K. CHEN AND JUSTIN SNIDER, MICHAEL K. CHEN ARCHITECTURE

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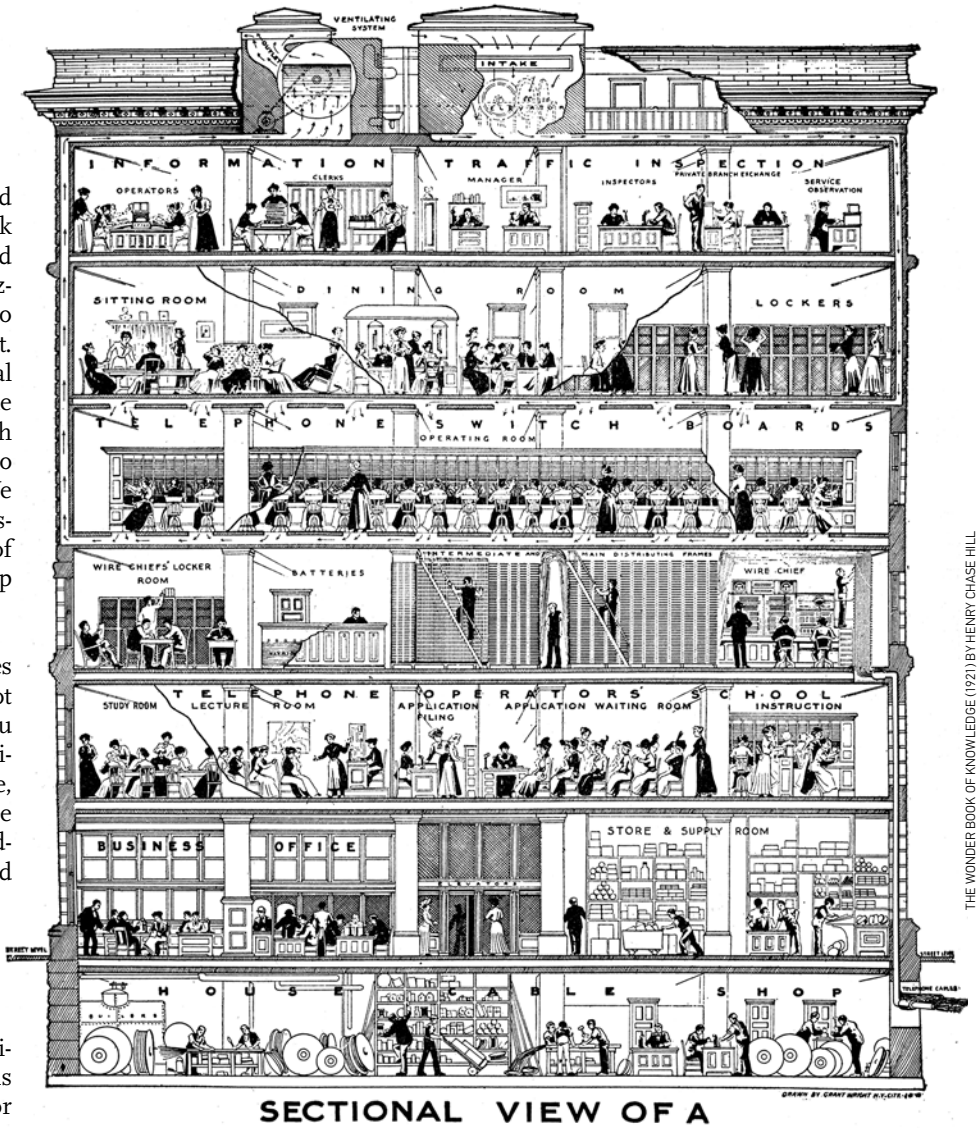
One thing that a lot of discourse often reduces information access to is access itself—just having the ability to get online and that should be sufficient. Fortunately, I think the discussion is expanding and enriching a bit, and we're recognizing that simply having the ability to access the Internet is not sufficient. We also have to have pedagogical services and support systems like public libraries, for instance, which I also write about fairly often, to help people make distinctions. We hear a lot of reference in the discussion of fake news and new forms of media literacy that we have to equip people with today.

I do think that information resources do, in many cases, reinscribe a lot of other forms of power that you mentioned. Information is inequitably distributed along lines of race, class, and gender, things that we see actually writ large in the urban landscape. Information provision and distribution also follow a lot of the same patterns.

But information is also a way to overcome some of those inequities as well. Empowering communities [and] marginalized populations with information about how, for instance, infrastructure works, or what redlining is, or the history of certain types of oppression can be a means of perhaps overcoming those



THE WONDER BOOK OF KNOWLEDGE (1921) BY HENRY CHASE HILL

SECTIONAL VIEW OF A TELEPHONE BUILDING

A Typical American Central Office Building, Showing the Efficient Arrangement of the Various Departments

RIGHT
An example of what Mattern calls telegraphic architecture, "a building where human operators interfaced between both machines and people."

RIGHT
A Berenice Abbott photograph from the 1930s documents the vitality of newsstands as hubs of information in urban life.

THE MIRIAM AND IRA D. WALLACH DIVISION OF ART, PRINTS, AND PHOTOGRAPHS: PHOTOGRAPHY COLLECTION, THE NEW YORK PUBLIC LIBRARY (1935). NEWSSTAND, 32ND STREET AND THIRD AVENUE, MANHATTAN.

obstacles or building our own infrastructures when the existing ones don't work. So that's a place where I think information- or knowledge-based resources can help to maybe overcome or overturn inequitable distributions of power.

Given your background in media studies, how did you come to see the city as a kind of subject?
I think part of it is my own personal background. I grew up with a father who is a furniture maker. I grew up in a hardware store. I've got an uncle who is an architectural engineer, a grandfather who is an industrial engineer, and a godfather who is a contractor. So people around me in my childhood, all of them are kind of shaping space in some way or another. I loved books, so I kept getting more and more books, and when I needed a new bookshelf my dad would just make me one according to my specifications. So my entire material environment growing up was, in a way, an expression of *affect*ion, I guess you could say—it was an affective medium. So that sounds really sentimental and I am fully aware of my privilege here in that regard, but that was something that was very palpable and apparent to me from a very young age.

I read a lot of foundational texts [in graduate school], including Marshall McLuhan and especially Lewis Mumford. Not only his *Technics and Civilization* but his *The City in History,* books that really help me to see a parallel between the history of technology and the history of cities. So much of the kind of examples he draws from in his two grand histories of urbanization books are recognizing that cities have evolved in response to changes in communication technology—for instance, wired communication and telegraph and telephone—so I think a lot of the texts that I read in graduate school helped to cement that connection and recognize the city itself as a medium and as a place that has evolved in response to changes in communication technologies.

What other questions about the city are most interesting to you right now?
That's a huge question! One of the challenges goes back to a question you asked earlier. I am interested in how not only city form but architectural form reflects the logics of particular technology. But I also don't want to give primary or sole agency to those technologies, which often happens in kind of more technological determinist fashion. I want to incorporate the social and political dimensions like race, class, and gender that you asked about before. So the challenge, the question I ask, is more of a methodological one than an ethical one. How can you pay attention to all this contemporary discourse about how technology has historically, and continues to, and will in the future transform urban form, but also recognize that the city is a social environment, it's a social ecology, and that new technologies are not a panacea and they could potentially exacerbate existing social inequities that are written into urban form itself?

THE CENTRO FINANCIERIO CONFINANZAS, ALSO KNOWN AS TORRE DE DAVID, 2014, CARACAS, VENEZUELA. CC-ZERO

ABOVE
Information embedded in building materials, even standardized ones such as concrete, includes knowledge from scientists and laborers.

Aren't you working on a project about sound?
I've often been interested in multisensorial methodologies. When I was writing my first book on library buildings, I would visit library buildings, and I was so conscious of how they were multisensorial environments. Sound, acoustic programming, is a really integral part of making a building with so many different programmatic elements happening simultaneously.

So that was an important lesson for me early in my own kind of intellectual development, to recognize the importance of looking at things through a multisensory methodology. Right now, I've been commissioned to write a couple of projects that all happen to be about sound. One is about the sound of logistics. There's a lot of research in my field, and in architecture and urban planning as well, about logistics these days. Media studies are now getting in that game as well. Most people are writing about it in terms of dashboards, and data visualizations, and other modes of graphic representation—the paperwork, the enterprise software that makes logistics possible. So I was asked to think about what we can learn about logistics by listening to it. What are the sounds of logistics?

The beeps on trucks as they back up, all the sounds of the container port, for instance, that provide cues to the people in machines working there. The different kinds of sonic cues of the whole supply chain that kind of extend the city into a global network. I want to think again about what we can learn about logistical landscapes, not just by looking at them, but by engaging them through other senses.

How have you thought about landscape or landscape design as a figure or force in your argument about cities in urban data?
Just looking at it from the historical perspective, particularly when I was thinking about working on my chapters on sound, I realize there was only so much that architecture could offer. Because so much of the resounding force of cities happens in those spaces in between buildings, for instance. It happens in the plazas and the open spaces, and it might ricochet off the facades of architecture, but it's actually kind of the landscape in between that actually transforms the public space of the city or makes it into a sonic or acoustic space for the voice for sonic broadcast for all the different types of acoustic resonances.

I think landscape is really important there, and of course the presence of other agents in space, whether they be other species or flora and fauna, that shape that acoustic environment too, shape the acoustic properties in a space. In several of the chapters, I tried to reinforce the fact that even if I am thinking about sound or thinking about the visuality of text, all media encounters are kind of multisensorial, and we encounter them in highly complex ecological environments. So landscape as well, with its methodologies and ecological way of seeing things and thinking about things, can really help to imagine the fact that, when we have these supposedly cognitive experiences with a media text, for instance, it's our intellectual experience that is being shaped by the larger ecology that is surrounding it. Those are some ways I think landscape has been really helpful. ●