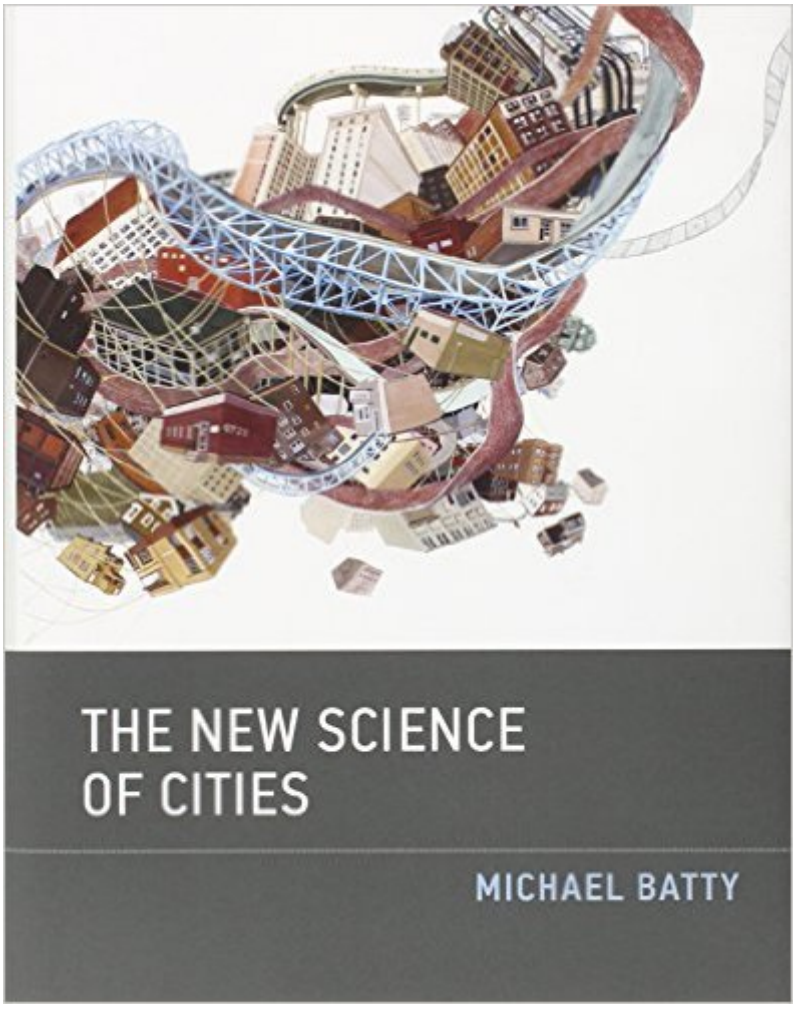
The New Science Of Cities (MIT Press)



Synopsis

In The New Science of Cities, Michael Batty suggests that to understand cities we must view them not simply as places in space but as systems of networks and flows. To understand space, he argues, we must understand flows, and to understand flows, we must understand networks -- the relations between objects that comprise the system of the city. Drawing on the complexity sciences, social physics, urban economics, transportation theory, regional science, and urban geography, and building on his own previous work, Batty introduces theories and methods that reveal the deep structure of how cities function.Batty presents the foundations of a new science of cities, defining flows and their networks and introducing tools that can be applied to understanding different aspects of city structure. He examines the size of cities, their internal order, the transport routes that define them, and the locations that fix these networks. He introduces methods of simulation that range from simple stochastic models to bottom-up evolutionary models to aggregate land-use transportation models. Then, using largely the same tools, he presents design and decision-making models that predict interactions and flows in future cities. These networks emphasize a notion with relevance for future research and planning: that design of cities is collective action.

Book Information

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Customer Reviews

If you’re a student or expert in spatial analysis -- say, a reader of Environment and Planning B, a journal that this book’s author (MJB) has edited for many years -- it’s very possible you’ll find this

book a masterful survey and extension of the professional literature.If, however, you're a general reader interested to learn new and stimulating facts about properties that the world's cities have in common, you'll almost certainly be disappointed. There's very little empirical discussion of cities in this book, and a great deal of math (mostly matrix algebra, with a bit of graph theory thrown in). A more descriptive title for this book might be something like "Mathematical modeling of cities and the planning process." You should also be advised that this new "science" is essentially economics. There isn't any biology or ecology involved, or anything about how the built environment affects the local weather (as it sure does here in Tokyo); and even the bit of physics the book contains is sometimes off-kilter.I came to the book as one of those general readers, albeit with a fairly high tolerance for math-heavy exposition. I found the book frustrating on several levels, as I'll describe below. Nonetheless, I admire the author's attempts to synthesize his field, and also the modesty with which he makes claims for this purported new "science." Throughout the book he is scrupulous to point out the limitations and the tentative or even metaphorical nature of many of the techniques he describes. For these reasons, as well the book's possibly being intended for an expert-only readership (notwithstanding the MIT Press's marketing that roped me in), I give the book close to a 4-star rating despite my own issues with it.

I fully agree with the detailed review provided earlier by A.J. Sutter, including the potentially misleading title and marketing, the lack of readability posed by the prose style and communication through mathematics, the impossibility to interpret the b/w illustrations in the book without downloading the colour web versions (i.e. dark red that represents high connectivity is the same shade of grey as dark blue that represents low connectivity), the neoclassical economics bias, etc.Most problematic I found however that the book attempts to advance a 'science of cities' without paying much attention to real cities. The mathematical formulae proposed are only applied to simplistic diagrams with limited resemblance to their real-world models, and there is no discussion of how the results of the analysis relate to actual urban environments. Thus for example when analysing networks in fig.7.3-7.4 the conversion of streets into axial lines around London's Regent Street misses about a third of the connections and glosses over the problem of converting a curved street into linear axial lines, fig.7.5 calls a square grid "Manhattan grid", while fig.7.9-7.13 show a map of Melbourne CBD that omits dozens of streets but includes several connections between the rail and street network that do not actually exist. In none of these examples is there comprehensive discussion of what the results of the analysis could mean, and there is no comparison with data about real flows. This is consistent with the absence in the list of references of much of the relevant

urban sociology, environmental psychology and urban design studies literature.

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