

Preface

I have always believed that as our understanding of cities improves, we will become wiser about the ways in which we need to intervene in their growth and function. Consequently, approaches to urban planning will then become much less intrusive than those that have dominated the design and management of cities throughout the last century. Notwithstanding the rather widespread reaction against centralized planning during the last twenty years, particularly in the West, it has been hard to find convincing strategies that operate in a more decentralized, low-key manner. This is largely because our understanding of cities has not kept pace with our desire to implement effective, yet invisible, unself-conscious styles of planning. This is beginning to change but it requires a dramatic shift in the way we think about cities.

This book introduces some of the ideas that I believe will eventually constitute a workable understanding of cities. They have been a long time in coming and it will take a much longer time yet to bring them to the point where we are able to connect them together to provide the theoretical infrastructure we need. As we move our perspective from that of top down to bottom up, the conception of the system we are dealing with changes, from one where we assume that all things about the system are ultimately knowable to one where this assumption is no longer tenable. Systems of cities are no longer thought of as being “complicated” but rather “complex,” in that there is always uncertainty about the outcome of processes of change that originate from the bottom up. This is what we mean by “complexity.” In this book, I will introduce models of cities that simulate morphologies that are

surprising in that their form cannot be anticipated from the assumptions and processes adopted in their representation.

This approach to cities (and many other physical and social systems) is important because it changes our attitude to design and intervention. Moreover, despite the theoretical apparatus that is needed to demonstrate these ideas in measurable terms, this approach is consistent with the way many people feel about the limits of our abilities in management and planning. Although this book is not about planning per se, some of the ideas here are sufficiently simple to provide demonstrations of alternative and uncertain futures for cities. These in and of themselves are necessary to inform decision making, for it is a consequence of the complexity approach that appropriate models should provide “information” rather than “solutions,” should “inform” rather than “solve.”

I have many people to thank for getting me to the point where I could write a book like this one. My erstwhile mentors from my undergraduate days in the University of Manchester where I spent the golden years of British Town and Country Planning, George Chadwick and Brian McLoughlin, would, I think, have been fascinated by the way this world of cities has turned out. They wrote about the systems approach in planning from the top down even though in the 1960s, there was a sense in which these systems actually operated from the bottom up. Peter Hall, my mentor and colleague in the 1970s at the University of Reading, and now again at University College London, is forever supportive of this kind of work. His wide-ranging appreciation of planning has always embraced the formal, and his support for CASA where I work at UCL has enabled us to develop a variety of initiatives that build on the approaches espoused here.

Many people are working in similar areas, adding to this science of complexity, and several have provided me with critical and constructive commentary. Paul Longley, a colleague from our days at the University of Wales Institute of Science at Technology in Cardiff in the 1980s where we worked on the fractal city, continues to drive these efforts with me at UCL. Peter Allen and Alan Wilson, pioneers in nonlinear thinking about urban dynamics who continue to build this edifice in their own ways, have always taken time out from their busy schedules to support my efforts. Yichun Xie, my former Ph.D. student from my time at SUNY–Buffalo in the early 1990s, continues to work with me on these problems. I spent an enjoyable sojourn in early 2003 at the Universities of Michigan and Eastern Michigan working with Yichun Xie, John Nysteyn, and Tom Wagner on the rank-size rule,

some of which is reflected in chapter 11. David O'Sullivan and Paul Torrens, who studied these problems during their doctorates at UCL, reinforced my conviction that the social sciences require the science of complexity if they are to move beyond mere description and speculation. I thank them all, and everyone else not named, for giving me the time and opportunity to pursue these enquiries.

Sonja Curtis organized the figures, drew some of them, and designed the book's admirable Web site, which is located at <http://www.ComplexCity.info/>. Bob Prior, Judy Feldmann, and Valerie Geary from The MIT Press did a splendid job in organizing the book's production. My wife Sue has been her usual tolerant self, never objecting to my absorption in this project while accepting my need to travel constantly in the search for new ideas and greener pastures. My son Daniel provided the wit and intelligence to keep all this in perspective. The book is as much theirs as mine.

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