



## The Review of Regional Studies

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### BOOK REVIEWS

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#### *Book Review Editors:*

Leslie Dunn and Robert Dunn

*Department of Economics and Business, Washington & Jefferson College, USA*

*ldunn@washjeff.edu [rdunn@washjeff.edu](mailto:rdunn@washjeff.edu)*

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**Roger White, Guy Engelen, and Inge Uljee. 2015. *Modeling Cities and Regions as Complex Systems: From Theory to Planning Applications*. MIT Press: London, UK and Cambridge, MA, USA. ISBN: 9780262029568, 344 pp., \$48.00 (hardcover).**

Reviewed by *Kailai Wang*, Ohio State University

This book offers an overview of classic cellular automata (CA) models for land use simulation. This is perhaps the most comprehensive book written by Roger White and his collaborators – Guy Engelen and Inge Uljee. These authors are well-known, accomplished innovators in the field of CA modeling of urban dynamics. In this book, the authors elaborate on the fundamental theories of CA-based models and present some well-fitted examples on how to apply CA-based models within various environments. Notably, the authors assume that readers already have some background techniques regarding CA modeling before reading this book. This book contains 12 chapters without a distinct preamble.

Chapter 1 argues that the appropriate CA modeling framework is to build on the theory of self-organizing complex adaptive systems. The authors indicate that CA is the most powerful algorithmic technique to model spatial dynamics. The self-organizing process itself is an evolution of the spatial structure, which is determined by both socio-economic and natural phenomena. Not only planned spatial structures but also unplanned urban forms are the outcomes of self-organizing processes. In addition, the authors reveal the significance of conducting client-driven research. They also express that their great hope of the emerging methodology is to better understand complex urban systems.

Chapters 2 through 4 consist of Theory and Consequences, Approaches to Modeling Cities and Regions, and Urban Systems and Spatial Competition. The early development of self-organizing systems models, with their planning implications, are reviewed and the impacts of central place theory and spatial interaction theory on CA-based models are also introduced. The empirical examples demonstrated in these chapters should be useful for readers who are interested in creating a bridge between theory and empirical modeling. Chapter 5 provides a transition from fundamental and theoretical issues to applications of CA-based modeling. The authors argue that the radial dimension and the cluster size-frequency dimension are two important fractal measures

in the process of planning and policy formulation. This is because both of the dimensions are measures of global heterogeneity and useful for model calibration and validation. A better understanding of a city's fractal properties may help practitioners and policy makers improve the effective policy interventions using scarce public investments.

Chapters 6 through 8 introduce several sophisticated CA-based land use models. Compared to the most basic formulation of CA models, the model described in Chapter 6 could work with more than two land use classes as well as control for the local neighborhood effects. However, this model is constrained to capturing "long-distance interaction effects" (p.139). Following this, the authors present integrated multiscale models which could incorporate regional activity and migration into the original CA-based models. In Chapter 8, the authors discuss the most developed regional models in this book. The application of a variable grid size CA approach makes it possible for researchers to model multiple regional activities at once. Currently, integrated multiscale models and variable grid models are widely used to guide real world planning and policy implementations in the context of highly developed GIScience and remote sensing technologies. Nevertheless, the traditional CA-based model also has its limitations due to the following assumptions: 1) space is homogenous, 2) defined neighborhoods are uniform, 3) transition rules are universal, 4) and the system is closed to outside influences.

Chapters 9 and 10 return to describe the theoretical issues of CA-based land use models. The authors imply an unambiguous argument in urban modeling – statistical and simulation models can only exactly inform us whether our model fails to predict the empirical data and help us find out the insignificant factors among our variables of interest. Practitioners and planners may feel disappointed by this issue. For the purpose of real-world applications, simulation models should be calibrated and validated. This is because practitioners and policy makers are more interested in prediction outcomes, in terms of "what if" experiments. The authors hold that better models may provide more detailed practical guidelines. Further research is still needed to link the existing theories with the predictions of CA-based models, accounting for the mathematical and algorithm issues.

A detailed real-world example of CA modeling is introduced in Chapter 11. The authors explain how to employ an integrated regional CA-based model to support spatial planning and policy making in Flanders, Belgium. The authors conclude with an argument that CA-based land use simulation is not sufficient to support the whole decision-making process. In fact, the CA-based model itself is generally considered as a classic top-down approach. Batty (2013) favors a bottom-up approach to better understand the complexity and uncertainty of urban space. This is noteworthy because Batty made extraordinary contributions to the field of urban modelling by using a top-down approach in his earlier works. The bottom-up approach merges the vast interdisciplinary literatures related to both the positive ("what is") and normative ("what should be") aspects into the process of urban modeling. Social phenomena should be understood in multi-dimensions due to the diversity of stakeholders' interests. Disputes could arise when it comes to the relationship between policy implementations and complex urban models. To some extent, the mechanism of social practices and institutions are not identifiable. Intersubjective meanings are rooted in mutual actions and social interactions, and thereby cannot always be directly measured.

This book ends with a chapter discussing future research endeavors in CA modeling. Generally, this book would be helpful for senior researchers who would like to obtain a systematic understanding of urban simulation. This book would also be attractive to novice learners of CA

modeling due to its easy-to-understand formulations, instructive tables and figures, and carefully cited references.

### Reference

Batty, Michael. (2013) *The New Science of Cities*. MIT Press: Cambridge, Massachusetts.

**Kenneth Scheve and David Stasavage. 2016. *Taxing the Rich: A History of Fiscal Fairness in the United States and Europe*. Princeton University Press: Princeton, NJ, USA. ISBN: 9780691165455, 288 pp., \$29.95 (hardcover).**

Reviewed by *Paul Walker*, West Virginia University

An incredibly relevant and much debated topic in the political realm is the question of how much of the tax burden should fall on the rich. This question has many important facets, including: what loopholes exist in the complex U.S. tax system, arguments about top marginal rates, whether rates on various types of incomes and profits should be raised or lowered, and debates on how tax policy should be shaped to deal with concerns about rising income inequality. Much of this debate is centered on a historical framework that points to a previous era that was more egalitarian, when tax rates on the richest individuals were at some of their highest levels. However, these tax rates in the early 20th century were a relic of a specific political environment that has since ended leading to a decline in top tax rates. Kenneth Scheve and David Stasavage explore this earlier political environment and use historical evidence to explore the background surrounding the reasons governments taxed the rich to a greater extent during this period.

The book is structured in three sections. The first section takes a look at the general arguments that have been made surrounding taxes. Specifically, Chapter 1 looks at the incentives that a government might have for taxing the rich. A central motivating argument for taxing the rich is the notion of fairness. However, fairness does not mean the same thing to all individuals. Here, the authors go through some of the different ways that fairness arguments can be made. These arguments include appeals to equal treatment, ability to pay, and a compensatory case. Of these arguments for taxing the rich, the authors claim that compensatory arguments were the most powerful politically as they made the case that those that received some sort of privilege from the government should pay higher taxes as compensation for their benefits.

Beyond discussing the arguments that have been made for why governments may want to tax the rich, the authors look at commonly held beliefs about taxing the rich, such as democracies being more inclined to tax the rich more heavily, or democracies responding to high inequality by increasing taxes on the rich. However, Scheve and Stasavage disregard these arguments claiming instead the mass mobilization for World Wars I and II caused the compensatory arguments to win out. The second chapter goes into much greater detail on the historical context (reaching all the way back to Medieval times and Renaissance Italy) of the arguments on how taxes should be applied such that citizens are treated as equals, again reiterating that fairness does not mean the same to all individuals.

The book then investigates time periods when governments have tried to get the rich to pay more taxes. The authors begin by examining income taxes from the turn of the 19th century to the end of the 20th. Prior to this period, countries primarily relied on indirect taxation as their means of collecting revenue. Governments did not begin to introduce income taxes until the late 1800s and top marginal rates were relatively constant and low until the early 1900s, outside of minor

blips when war financing was necessary. Again, Scheve and Stasavage explore the evidence to evaluate the role that democracy, specifically universal suffrage, inequality, and war mobilization, had on the ballooning of top marginal tax rates on income. There is minimal evidence that these factors mattered, besides mass mobilization for the First World War. In terms of compensatory arguments, the burden of the draft and mass mobilization primarily fell on the poor and middle income citizens, thus the rich were seen as needing to bear the burden of financing the war. Chapter 5 then looks at the question of taxation on inheritance. Taxing inheritance is an effective tool in terms of reducing inequality, but like the income tax this motivation is not borne out by the evidence. Instead, war financing is identified as the main driver of increased tax rates on estates passed on to the bequeathed. The final chapter of this middle section looks to put the taxes on the rich in the context of the compensatory arguments. This included increases in taxes on excess and war profits. The justification is that corporations earning profits due to the war were doing so unfairly and thus should face higher taxes. This section concludes, by dispelling the Willie Sutton effect, that the government taxed the rich because “that’s where the money was,” instead citing political reasons.

In the final section, Scheve and Stasavage deal with the central question of why governments have taxed the rich. Chapter 6 takes a detailed look into the extent and reasoning behind taxing the rich in a sample of Western European and North American countries. Specifically, these governments started to increase taxes on the rich as they profited from the war mobilization. In the next chapter, the authors turn their attention towards the reason that mobilization for the world wars was a driving factor for taxing the rich. Here, the authors make the case that the timing of the world wars and the current stage of technological development created an environment that was ripe for compensatory arguments that favored taxing the rich heavily. Explicitly, the railroad allowed for nations to assemble, transport, and supply massive armies that were manned through the conscription of its citizens, which opened the door for compensatory arguments on taxing the rich. However, the advancement of military technology led to a decline in the necessity of mass armies and therefore a decline in compensatory arguments for taxing the rich.

Chapter 8 explores why in the post war period taxes on the rich started to decline. First, the authors take on the notion that there was a post war consensus that the rich should be taxed at higher rates to fund newly formed welfare states. While, these claims are not entirely incorrect, the case is made that it was not a consensus and had its detractors. Further, the authors dispel the arguments that tax rates declined due to fears of hindering growth and globalization. Ultimately, Scheve and Stasavage point to the case that arguments rooted in fairness for taxing the rich became muddled without the backdrop of the conscription to fight in large scale wars. The book then closes off with a discussion of what the future of taxing the rich may hold. Here, the authors discuss some survey evidence that suggests currently in the U.S. support for more progressive taxation has decreased in comparison to the early 20th century. Lastly, the book cautions readers to avoid making comparisons to previous eras when the surrounding conditions have changed drastically.

Despite a well thought-out and argued book, one minor criticism exists. The authors claim that the conscription of citizens made room for compensatory arguments for taxing the rich, since they were not asked to sacrifice their lives by fighting in the wars. Further, these arguments were weakened as military technology advanced and mass mobilization was no longer as necessary for fighting wars. Yet, very little attention is paid to the case of the Vietnam War’s effect on taxing the rich, where there was a significant mobilization and conscription of citizens. The authors do

point out that this war was the first to feature laser guided munitions, but these only accounted for a small portion of the total munitions used in the war. This case only receives a tiny discussion despite being a prime example for when the rich would have been taxed more heavily.

This book looks at the history of taxation of the rich and takes on the task of exploring when and why the rich have been taxed more heavily than others. The authors take on a bevy of other possible explanations, but mainly point to the mobilization for World War I and II as the primary reason that the rich were taxed more heavily during the wars and the immediate post war period. Each possible explanation is given a fair case and treated to thorough discussion, which results in a strong case being made for the presented arguments. Due to the reliance on historical evidence, this book is approachable for nearly any individual interested in the history and exploration of the reasons for taxing the rich.

**Pablo Shiladitya Bose. 2014. *Urban Development in India: Global Indians in the Remaking of Kolkata*. Routledge, Taylor & Francis Group: London, UK and New York, NY, USA. ISBN: 9780415735971, 166 pp., \$148.00 (hardcover).**

**David Sancho. 2016. *Youth, Class and Education in Urban India: The Year that Can Break or Make You*. Routledge, Taylor & Francis Group: London, UK and New York, NY, USA. ISBN: 9781138785861, 178 pp., \$148.00 (hardcover).**

Both Reviewed by *James Herndon*, University of Alabama

The Routledge Series on Urban South Asia takes an empirical and interdisciplinary approach to its eponymous subject: the urbanization and globalization of India, Pakistan, Bangladesh, and Sri Lanka. While they take different approaches to analyzing urban life in major Indian cities, the first two volumes are notable for their continuities as well as their differences.

Bose's decade of research and fluency in Bengali enabled him to write a short, accessible book that is nonetheless impressive for both its depth and breadth. Today in the state of West Bengal, Kolkata explicitly aspires for recognition as a "global city." Bose takes readers on a tour of everything that portends: the role of India's diaspora as a source of both inspiration and capital, how perceived international standards drive city planning, the economic and social realities of east Kolkata, the role of civil society, and the mixed record of recent real estate projects.

After a brief introduction, in Chapter 2 Bose provides a history of emigration from the subcontinent. Long-established Indian communities exist across the Global South, especially in Malaysia and Myanmar, while more recent emigrants surged into the Arab Gulf countries. But when the Indian government finally awoke to the massive potential of these networks in the 1980s, they focused on the professional class in rich Western countries. Chapter 3 describes how those well-heeled Non-Resident Indians (NRIs) play a disproportionate role in politics, where they tend to support right-wing Hindu causes and delivered a rapturous welcome for Prime Minister Modi in 2014 in New York City. They have also provided capital for state bonds and enjoyed higher interest rates on foreign-currency accounts.

That narrow view of NRIs has consequences for citizens in high-growth urban areas. Chapter 4 shows that as cities all over the world compete for investment, they are converging on a single standard of living, expressed through infrastructure, architecture, public services, and lifestyles. But planners and developers expanding into rural areas must deal with a landscape of humanity, not the blank canvas that maps might imply. Bose makes that point eloquently when he

paints the history of Kolkata in Chapter 5, from its days as a malarial outpost of the East India Company to the economic and political capital of the British Raj. Kolkata in the 20th century embodied the major trends that shaped India as a whole. Refugees flooded the city in 1947, overwhelming its resources even as Partition severed traditional economic ties. The 1971 Bangladesh War of Independence brought another influx of desperate people to Kolkata even as it stagnated under central planning. But after decades of leftist rule, today both major parties adhere to a new consensus that Bose calls “the ideology of neoliberal developmentalism” (p. 87).

Bose pauses in Chapter 6 to describe the East Kolkata Wetlands, beset with social problems but economically and ecologically vital for the city. As many as 100,000 people, quite often members of disadvantaged Scheduled populations, live in villages dotting this brackish estuary that buffers the monsoon storms. Kolkata’s wastewater allows them to harvest over 10,000 tons of fish *daily* for the city’s consumption. Investment in the area exploded after the ruling party liberalized urban policies in 1997. But often this meant that poor farmers without any formal title to their land had their property expropriated and livelihoods extinguished. While this occurs all over India, nowhere do the immediate environmental consequences threaten the well-off quite so clearly as in Kolkata. Bose relates an inspiring story of how non-governmental organizations successfully lobbied state and national governments to declare the area subject to the Ramsar Convention, an international agreement on the preservation of wetlands. It appeared that India’s international aspirations would for once serve its most vulnerable populations, but the vagaries of the judicial system and pervasive corruption subsequently rendered much of that idealism moot. Bose characterizes the prevailing status quo of eviction and building as “a policy of retrospective regularization” (p. 105).

As Chapter 7 shows, even legal and well-intentioned efforts to improve a city can flounder, as in the case of the Kolkata Environmental Improvement Project, an infrastructure and resettlement project jointly financed by the Asian Development Bank, the Government of West Bengal, and the Kolkata Municipal Corporation. While the city certainly needed better sewage and drainage systems, a bureaucratic morass left many of the displaced resentful for being uprooted from their neighborhoods and jobs. Those feelings were exacerbated by “bourgeois environmentalism” (p. 111) that designated urban bodies of water as suitable for parks, but not fishing or bathing. Finally in Chapter 8, Bose offers thumbnail sketches of three large residential developments, all of which explicitly sought out and promoted the presence of NRIs, despite Bengal’s relatively small diaspora. Kolkata West International City promised to live up to its name, offering “a truly international living experience” (p. 139). Ironically, the project stalled out after its Indonesian backers became enmeshed in land-grabbing scandals in other parts of West Bengal. Vedic Village marketed itself as a health resort in harmony with nature, albeit one built on land coerced from villagers at well below market prices. South City actually exceeded expectations, selling out every unit on site with 35 percent going to NRIs. Tellingly, the local school promised to “bring out the David Beckham, Bill Gates, or President Obama” (p. 147) in its students. Apparently Sachin Tendulkar, Nandan Nilekani, and Manmohan Singh were inadequate role models for Indians purchasing a \$300,000 flat.

Bose covers politics, economics, ecology, and sociology; but the work as a whole remains both coherent and compelling. Across these disparate topics he balances an appreciation of India’s recent economic growth with concern for the injustices that too often fuel it. Leaders in cities like Yangon and Havana would do well to read it closely.

Sancho's book takes a much narrower approach, largely drawn from a year of fieldwork in 2009-2010. He relates the experience of students at two very different schools in Kochi, Kerala, to illustrate that whatever its benefits, education can exacerbate preexisting inequalities. After establishing the context for both his chosen city and methodology, Sancho provides an overview of how education evolved in Kochi. He then captures the contemporary reality in detail for students at two schools that both see themselves as "middle class," but that offer disparate access to opportunities in globalizing India.

In Chapter 1, Sancho acknowledges that class is not an objective category so much as an idea that affects how people see themselves and the world. He defines class as "a constantly re-enacted cultural project," (p. 10) one that he will document by observation and conversation. This frequently led him to highlight the dichotomies hidden beneath homogeneous rhetoric: between Kerala's "old" and "new" middle class, between Indians of different castes and religions, between parents and children, and between cliques in each school. Chapter 2 explains the historical context behind the role of literacy and education in the "Kerala Model" of development. In the colonial era, relatively more privileged groups took advantage of education offered by missionaries, so fluency in English emerged as a marker of class. While public education expanded after Independence, in liberalized post-1991 India the pendulum swung back towards private schools that produce (or at least enroll) superior students, but those schools also run the risk of perpetuating social divisions.

Sancho then uses Chapter 3 to describe the "aspirational regimes" around parents and students at an elite high school in central Kochi. He found that for those with means school choice revolved around success on entrance exams over all else, including distance and religious affiliation. Risk aversion drove a near universal preference for professional degrees while also prompting parents to enroll their teenagers in expensive after hours coaching. He noted that parents obscured much of this micromanagement by portraying their children as "self-reliant, self-motivated, and highly ambitious individuals" (p. 74).

In much the same way that Bose noted how the idea of a "global" standard shaped Kolkata's landscape, Sancho in Chapter 4 explores why globalization's appeal convinced the elite school to offer students an exchange program in England. That same school worked to achieve designations such as the "International School Award" overseen by the British Council. But for both students and administrators, this international branding obscured an uneasy feeling of alienation from their identity as Indians, one they attempted to reinforce through a renewed commitment to "Hindu practices disguised as Indian values" (p. 85) such as vegetarianism and yoga. Chapter 5 gets to the heart of the book: the perceptions, anxieties, and hopes of students attending the high-pressure English-medium school. Sancho first notes that even this elite school's students come from a wide range of families, and that heavily influences their success and prospects. A young man from a wealthy, high-caste family speaks excellent English and condescends to his teachers, while his peers of more modest means stake their self-worth on abstaining from "westernisation." Sancho then shifts his focus to the adjacent island of Kothad, where the recent construction of a bridge offered fewer opportunities than one might expect. While the better off parents used the bridge to access better private schools in the city, the less fortunate still settled for the local Malayalam-medium school. This segregation of students by family income threatens to undermine the credibility of the merit and testing-based education system in India. In the penultimate chapter, we see how the children anticipating college and white-collar jobs experience their final year of school as an exhausting and nearly intolerable regime of test

preparation, while the children of fishermen in Kothad face no such pressure as they are almost certain to move into blue-collar employment after graduation. Sancho's final chapter reiterates his argument that despite massive gains in income and literacy, education in Kochi too often serves to reinforce class divisions rather than break them down.

While his focus on lived experience makes for an intimate and engaging read, Sancho's insistence on seeing his subjects through the lens of class occasionally led him to assertions that are uncharitable at best. For example, those of us with a more neoliberal outlook might see private education as an accountable and effective means of ensuring a child's welfare, and not "a new arena for the wealthiest to reinstate their class privilege" (p. 82).

The series editor is an anthropologist by training, which might be why neither book features the deluge of equations and statistics *de rigueur* for many economics and regional science journals. But these books capture something essential about India today that statistics like GDP growth cannot. Tumultuous and disruptive growth comes with a price. Old certainties and identities have faded before new ones can cohere. If the dream of the Global Indian proves out of reach for too many of India's have-nots, those left behind will be easy marks for the unscrupulous leaders shilling noxious and regressive Hindutva nationalism. Going forward, this series should serve as a useful reminder for South Asia and development specialists to look beyond the shining numbers to the uncomfortable reality undearneath.