



In Medellín, Colombia, water tanks are being repurposed to create public spaces that offer classrooms, cafes and theatres.

URBAN STUDIES

Blueprint for a cooperative city

Colin Ellard examines a study of the new urban paradigm that fosters ‘deep sharing’.

As urbanizing countries grapple with the need to provide sustainable energy and transport for their burgeoning cities, start-up companies are creating a culture and economy of sharing. Many are commercial. The global home-rental ‘community’ Airbnb, for instance, has an estimated 60 million users in 34,000 cities. US-based transport company Uber, which links registered drivers with passengers by way of smartphones, is active in more than 360 cities across 6 continents. Car-sharing services such as Zipcar are also widespread, attracting millennials who blanch at the costs of car ownership (environmental as well as financial).

Commercially mediated sharing can have a dark side. Sharing can skew local economies. Property owners turning to Airbnb may convert entire buildings to de facto hotels in cities such as New York, potentially contributing to housing crises. And Uber uses a surge-pricing algorithm to match supply and demand, meaning that users can face unpredictably high fares during periods of peak demand.

There is an alternative: bottom-up ventures that are digital or based in communities, rather than commercial. In *Sharing Cities*, environmental consultant Duncan McLaren and urban-policy scholar Julian

Agyeman lay out, with impressive depth, clarity and wisdom, a comprehensive prescription for a sharing paradigm that incorporates such models. Noting that sharing has been a sociocultural and informal practice for millennia, McLaren and Agyeman also reveal the promise and pitfalls of such an approach at a time when neoliberal economic policies emphasizing individualistic profit often trump public goods and services.

Sharing Cities explores the potential in dense urban spaces for ‘deep sharing’ of goods, resources, services, talent and experience through the Internet, with its rapid, extensive linking of lenders and borrowers. The models that the authors examine include barter clubs, credit unions, cooperative land trusts and co-housing to online and other peer-to-peer (P2P) networks and supper clubs. As they point out, commercial services barely scratch the surface of what is possible in a true

sharing economy. For example, decentralized P2P networks such as TaskRabbit — in which users can exchange skills and services without strong corporate oversight — can facilitate substantial sharing networks with minimal supervision. Public-transport systems can be considered a form of sharing, because the costs of mobility are shared between many.

Each chapter focuses on a particular aspect of sharing (production, consumption, politics, justice), and opens with a vignette of a city that exemplifies it. San Francisco, California — a hotbed of entrepreneurial start-up culture driven in part by Silicon Valley — is used to illustrate consumption. That kick-starts a discussion of open skills and knowledge sharing on online collaborative platforms that fly in the face of conventional commercial secrecy.

Medellin, Colombia, is used as an example of sharing in the context of social justice, as a result of the city’s spectacularly successful overturning of social marginalization over the past decade. This has been achieved through an ongoing architectural transformation of water tanks into shared public spaces, as well as the introduction of its



Sharing Cities: A Case for Truly Smart and Sustainable Cities
DUNCAN MCLAREN
AND JULIAN AGYEMAN
MIT Press: 2016.

sustainable Metroplus bus rapid transit system. McLaren and Agyeman describe how other cities can foster inclusivity and sharing through prudent adjustments in policy and priorities, provision of open data and more thoroughgoing input from citizens at the grass-roots level.

As I worked my way through each chapter, I rode a crest of optimism about the imminence of real change, only to crash back to reality as I realized how difficult it is to ensure that sharing transformations are transparent, equitable and just. The authors never flinch from tackling the complexities and contradictions inherent in these examples. They present exquisitely balanced explanations of both the potential of sharing and its vulnerability to corruption by opportunistic invaders seeking to maximize profit over fairness.

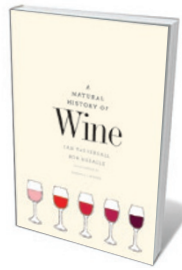
In many cases, as McLaren and Agyeman show, overcoming conflicts between bottom-up and profit-driven sharing ventures demands reconfiguration of urban policy. Two examples of this are participatory budgeting, in which citizens share responsibility for allocating resources, and shared land ownership, which emphasizes a public commons. Both deter the exclusions often generated by gentrification.

My only criticism is with one of the book's key premises: that humans are evolutionarily predisposed to share across the board. The authors point to work in developmental psychology showing that babies are aware of fairness and injustice (M. F. H. Schmidt and J. A. Sommerville *PLoS ONE* 6, e23223; 2011). Yet there is no shortage of evidence in evolutionary psychology — and everyday life — for the human tendency towards selfishness under some circumstances, towards some classes of others. And theoretical work has suggested that under many conditions common in human society, cooperation is likely to collapse (A. J. Stewart and J. B. Plotkin *Proc. Natl Acad. Sci. USA* 111, 17558–17563; 2014). Indeed, even the cited work by Schmidt and Sommerville shows that more than one-third of the infants in the study kept the best 'loot' for themselves.

In part, such differences are surely what underlie the constant push–pull between new sharing paradigms and the ventures that co-opt and parasitize them. It would have helped the balance of McLaren and Agyeman's argument to describe some of the seamy underbelly of our evolutionary heritage as well as the rosier side of our natures. ■

Colin Ellard is a cognitive neuroscientist at the University of Waterloo in Canada, specializing in the study of the relationship between human psychology and urban design. His latest book is *Places of the Heart*. e-mail: cellard@uwaterloo.ca

Books in brief



A Natural History of Wine

Ian Tattersall and Rob DeSalle YALE UNIVERSITY PRESS (2015)

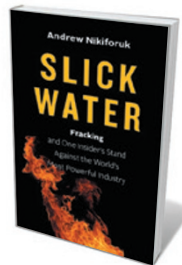
Was science ever more intoxicating? This sparkling contribution to the science of wine by palaeoanthropologist Ian Tattersall and entomologist Rob DeSalle draws on a staggering array of disciplines, from neurobiology to physics. Starting at the putative cradle of wine-making — an Armenian cave containing a 6,000-year-old proto-winery — the two trawl the research on frugivorous higher primates' putative hankering for fermented fruit; the bodily journey of a "wine-derived ethanol molecule"; and the impact of climate change on cultivation (J. Goode *Nature* 492, 351–353; 2012).



White Eskimo: Knud Rasmussen's Fearless Journey into the Heart of the Arctic

Stephen R. Bown DA CAPO (2015)

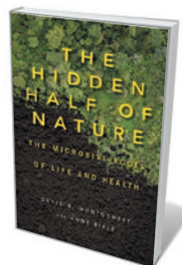
The part-Inuit, part-Danish explorer Knud Rasmussen is famed for his 32,000-kilometre Fifth Thule Expedition (1921–24) from Hudson Bay to Alaska. But as Stephen Bown reveals in this masterful biography, he was also an Arctic Richard Francis Burton, publishing key anthropological works on Inuit culture in Canada and Greenland. Ultimately, Bown shows, Rasmussen became a scientist-bohemian "as comfortable in bearskin pants on a featureless wind-lashed plain as he was in a formal suit and bow tie attending the opera".



Slick Water: Fracking and One Insider's Stand against the World's Most Powerful Industry

Andrew Nikiforuk GREYSTONE (2015)

This meticulously researched study by journalist Andrew Nikiforuk lifts the lid on the costs of that vast geological-engineering experiment, fracking. It centres on Canadian environmental impact assessor Jessica Ernst, who in 2005 found explosive levels of methane in her well water, fingered the culprit as fracking and launched a legal battle. Interwoven with her story is a deft history of fracking from the 1850s (when torpedoes and nitroglycerin were used) through the 1960s (nuclear explosions) to modern hydraulic fracturing.



The Hidden Half of Nature: The Microbial Roots of Life and Health

David R. Montgomery and Anne Biklé W. W. NORTON (2015)

Soils and the human gut teem with microbes, and both communities need care and feeding to support, respectively, nutrient-rich crops and healthy immune systems. So emphasize geologist David Montgomery and biologist Anne Biklé in this beautifully synthesized scientific memoir. Personal experiences — revitalizing degraded garden soil and surviving a major health scare — become ways into swathes of cutting-edge research in microbiology, from agronomist Lorenz Hiltner's work on "disease suppressive" soils to the Human Microbiome Project (see go.nature.com/tsty3t).



The Snowflake: Winter's Frozen Artistry

Kenneth Libbrecht and Rachel Wing VOYAGEUR (2015)

In 2003, physicist Kenneth Libbrecht (*J. Hoffman Nature* 480, 453–454; 2011) published the first edition of this aesthetic and scientific celebration of the snowflake. With park ranger Rachel Wing, Libbrecht returns with fresh research, more advanced microphotographs and a history of snowflake imaging from Robert Hooke's 1665 drawings to Wilson Bentley's photographs, taken between 1885 and 1931. A gallery of jewels — Antarctic 'diamond dust', rococo stellar dendrites and beyond. [Barbara Kiser](#)