

# Urbanization

Dyrehaugen Web Notebook

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# 1

## Urbanization

Web Collection - Work in Progress



Cities and towns are too specialized - too monocultural, too modern, too fossil-fuel reliant - and work less well in practice than diverse places.

*Urban Scaling* is about non-linear relationships stemming from agglomeration of humans in geographic space.

Recently the *Corona virus COVID-19* has hit - overproportionally in densely populated urban areas. *Urban Epidemics* is an example of *Urban Scaling*.

Urban Scaling can be positive - *agglomeration economics of scale* - or negative *agglomeration diseconomics of scale* - like the corona urban epidemic.

As motivation we take this 3D map of the Coronavirus (Covid-19) outbreak in the US.

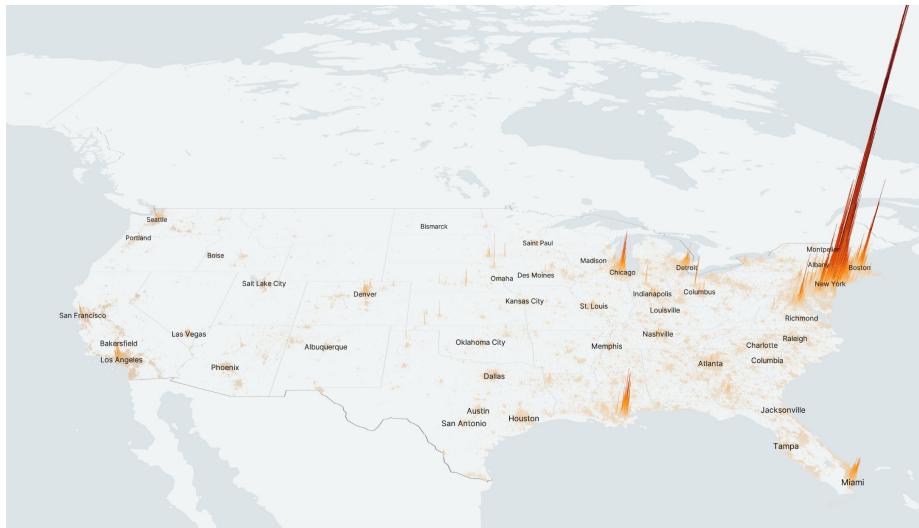


Fig. 1 Confirmed Corona Cases per Population in US Counties May 2020  
(Source: ? medium.com )

*Urban Epidemics* is a particular variant of *Urban Scaling*.

#### De-urbanization

Urbanization was (and is) made possible by fossil fuels. A post-oil-peak future will likely be characterized by de-urbanization.

## 2

# Urban Degrowth

## 2.1 Imaginary: Urban Downscaling - Exiting the Economy

*Memo Mastini:*

Decommodifying essential services is also a way for breaking the ‘productivist nexus’ (the twin societal goal of full-time employment and perpetual growth) and, therefore, beginning to downscale the metabolism of our economic system. Imagine if we were to even just partially decommodify the housing stock by expanding public housing and capping the price of private housing at half its present level. Citizens would suddenly be able to work and earn significantly less than they presently do without any loss to their quality of life. The economy would produce less as a result, but it would also need much less. In such an economy private wealth (or GDP) may shrink reducing the incomes of corporations and the very rich, but public wealth would increase, significantly improving the lives of everyone else. And given the overwhelming scientific evidence on the limits of decoupling GDP growth from environmental impacts, this is the only way to meet our climate commitments.

Mastini

*Memo Savini:*

A systemic imaginary of transition, degrowth is a ‘source of hope and dreams’ for a more equitable and sustainable society that has ‘exited the economy’.

Outlines three transitions toward urban degrowth, arguing for a regional imaginary of polycentric autonomism, a paradigm of finity in development, and care for habitability as principle of spatial organization.

A degrowth perspective couples the critique of contemporary market economies

with the prefiguration of a society emancipated from the imperative of competition.

A degrowth imaginary begins from evidence indicating the impossibility of decoupling economic growth from environmental destruction

Against the hegemony of growth in (eco)modernist thinking, degrowers call for a de-commodification of nature, labour, land, and housing and for an ethic of solidarity, cooperation, and wellbeing.

Against consumerism - a cultural shift toward values of *buen vivir*, sufficiency, and simplicity

In sum, degrowth is a project of transitioning systematically toward a new society.

First, the paper argues for an imaginary of regions as polycentric federations of autonomous settlements. Second, it calls for a planning paradigm led by principles of finity in urban development. Third, it proposes to mobilize the notion of habitability in shaping of socio-spatial relations.

Rethink cities as dynamic sites of deceleration, regeneration, and redistribution.

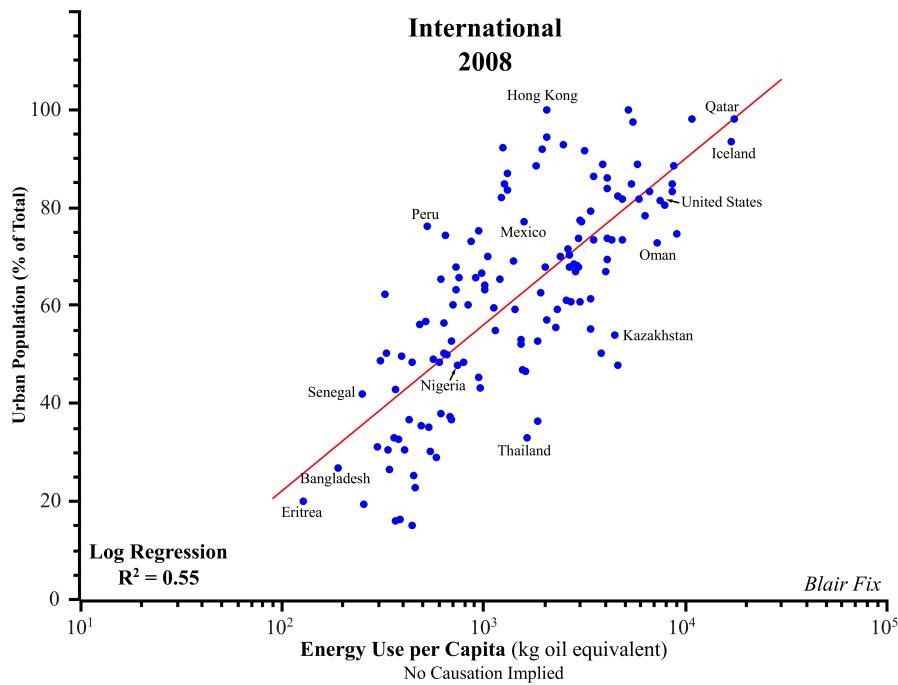
Urban degrowth research has largely demonstrated the capacity of real-life practices of urban dwelling to plant the seeds of a more cooperative, symbiotic and democratic urban society.

Savini (pdf)

## 2.2 Urban Energy Use

*Fix (twitter)*

Are cities sustainable? A loaded question, yes. But one we should think about nonetheless. Here's an undeniable fact: urbanization correlates strongly with energy use per person.





# 3

## Urban Epidemics

**Social Distancing** has become the mantra of policy response to the 2020 *Corona Outbreak*. Economic forces have for centuries pushed people closer and closer together in urban agglomerations. The emergence of a major *pandemic* in the 21th century - although forewarned - obviously was not a risk factor considered seriously by these same *economic forces* - neither private nor public *decisionmakers* when promoting and allowing the construction of the great agglomerations.

*Homo Sapiens* was not made by nature to live in megacities. The corona outbreak is a piece of nature striking back as a reminder of the vulnerability of the artificial urban environment to the most basic of natural evolution - mutation of a virus.

*Stier (2020)* provides an empirical treatment of the relation between urban size and the speed of epidemic spread in the US during the 2020 corona outbreak. The main findings are:

- *faster* spreading in larger cities
- *larger* fractions of the population infected
- *more aggressive* distancing needed

The virus is new, i.e. *everyone is susceptible*. The virus provokes a respiratory disease which makes *transmission easy*. The reproductive number  $R_{eff}$  seems to be higher than for ordinary influenza. Two factors determine how contagious the disease is: 1)length of the infectious period and 2) social contact intensity. Cities are the best breeding ground due to the high contact intensity.

The higher socioeconomic connectivity of larger cities in a fast urbanizing world makes containing emergent epidemics harder. But the density of socioeconomic connections in cities can also facilitate the spread of information, social coordination, and innovations necessary

to stop the spread of COVID-19. This information and associated actions can easily spread much faster than the biological viral contagion. To fight an exponential, we need to create an even faster exponential! (*Stier (2020)*)

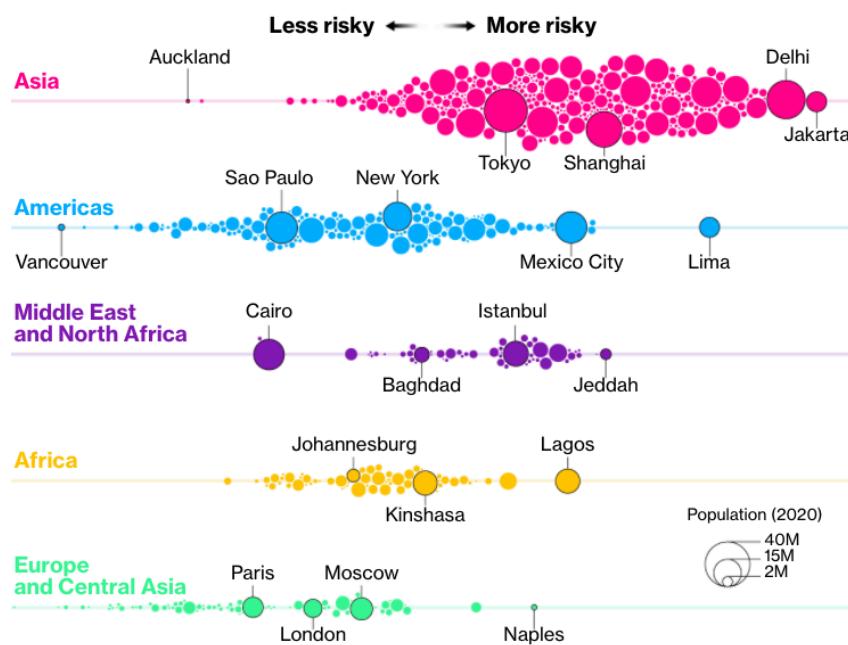
So - the fight between *Humans* and *Nature* goes on! The bigger question - of course - being whether Humans should consider stopping creating such large [*unhuman*] agglomerations. There are many *diseconomics to scale* - epidemics being just one. Cities grow due to dominant *economics of scale* -i.e. benefitting the rich and powerful. The diseconomics are borne by others. Changing the current path does not seem easy - it goes to the core issue of *Capitalism*. This is treated *elsewhere*. Here we look into the more narrow theme of Urban Scaling

# 4

## Urban Risk

### Cities At Risk

Residents of Asia's urban centers are most exposed to factors including air pollution, heat stress and climate change vulnerability



Source: Verisk Maplecroft Global Risk Analytics Dataset

Bloomberg (paywall)



# 5

# Urban Scaling

Economies of scale exists but are balanced by diseconomies of scale.  
“If economies of scale always work, why isn’t there just one company?” -?

## 5.1 Settlement-Size Scaling

### 5.1.1 Prehistoric

*Haas*

Settlement size predicts extreme variation in the rates and magnitudes of many social and ecological processes in human societies. Yet, the factors that drive human settlement-size variation remain poorly understood. Size variation among economically integrated settlements tends to be heavy tailed such that the smallest settlements are extremely common and the largest settlements extremely large and rare. The upper tail of this size distribution is often formalized mathematically as a power-law function. Explanations for this scaling structure in human settlement systems tend to emphasize complex socioeconomic processes including agriculture, manufacturing, and warfare—behaviors that tend to differentially nucleate and disperse populations hierarchically among settlements. But, the degree to which heavy-tailed settlement-size variation requires such complex behaviors remains unclear. By examining the settlement patterns of eight prehistoric New World hunter-gatherer settlement systems spanning three distinct environmental contexts, this analysis explores the degree to which heavy-tailed settlement-size scaling depends on the aforementioned socioeconomic complexities. Surprisingly, the analysis finds that power-law models offer plausible and parsimonious statistical descriptions of prehistoric hunter-gatherer settlement-size variation. This finding reveals that incipient forms of hierarchical settlement structure may have preceded socioeconomic complexity

in human societies and points to a need for additional research to explicate how mobile foragers came to exhibit settlement patterns that are more commonly associated with hierarchical organization. We propose that hunter-gatherer mobility with preferential attachment to previously occupied locations may account for the observed structure in site-size variation.

Haas (pdf)

## 5.2 Scaling Laws - to the better or to the worse?

“Scaling laws are power-law relationships of the form  $Y = cX^\beta$ , where  $Y$  represents a variable which varies in a systematic way with the size  $X$  of subsystems and  $c$  and  $\beta$  are parameters. They have two powerful advantages: they summarize structural features of systems in a very efficient way, and they reveal the effect of universal constraints acting on the structure and development over several orders of magnitude in these systems... The main resources enabling urban development are the technical and cultural innovations which increase the productivity, the diversity and the cohesion of human activities; the availability of these resources relies on the production and exchanges of information ... The role of cities as centers for the integration of human capital and as incubators of invention was rediscovered by the “new” economic growth theory, which posits that knowledge spillovers among individuals and firms are the necessary underpinnings of growth (Lucas 1988, Romer 1986) ... This seemingly spontaneous process, whereby knowledge produces growth and growth attracts knowledge, is the engine by which urban centers sustain their development through unfolding innovation. The essential role of knowledge generation, recombination and circulation within and across urban areas must be at the core of any proposed explanation for urban scaling.” (Pumain 2006)

There are however, other more critical views on the story of urban agglomeration. Naik and Oldfield (2015) Urbanisation inflicted by Capitalism Urbanization is seen as a an enterprise of *The Urban Industry* - a term for the ‘interlinked and interdependent relationships among NGOs, academia, business, high culture and governments’ that keeps afloat the story of ‘cities as centers of innovation, creativity, happiness, good health and, even astonishingly the cause and the solution for global warming’. Naik and Oldfield present evidence to the quite contrary: ‘cities are in fact creators, incubators and perpetuators of poverty and inequality.’ Actually, as they say: ‘The urbanisation of the world should not be celebrated’.

## 5.3 Scaling Math

Urban Scaling Research finds that Social Contact Intensity is linked to City Size approximately as a power law:

$$k(N) = k_0 N^\beta$$

with  $\beta = 1 + \alpha$  and  $\alpha = 1/6$  according to Bettencourt.

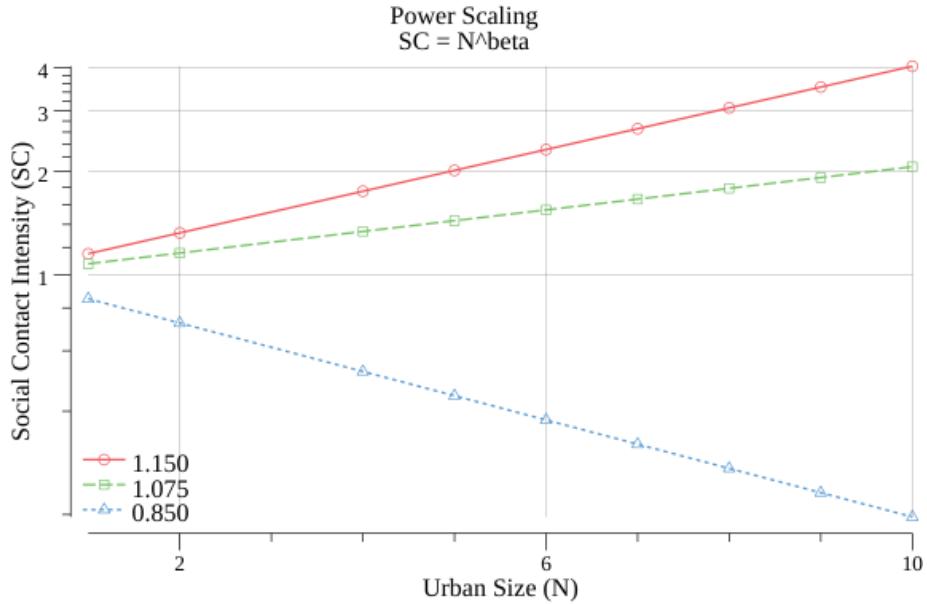


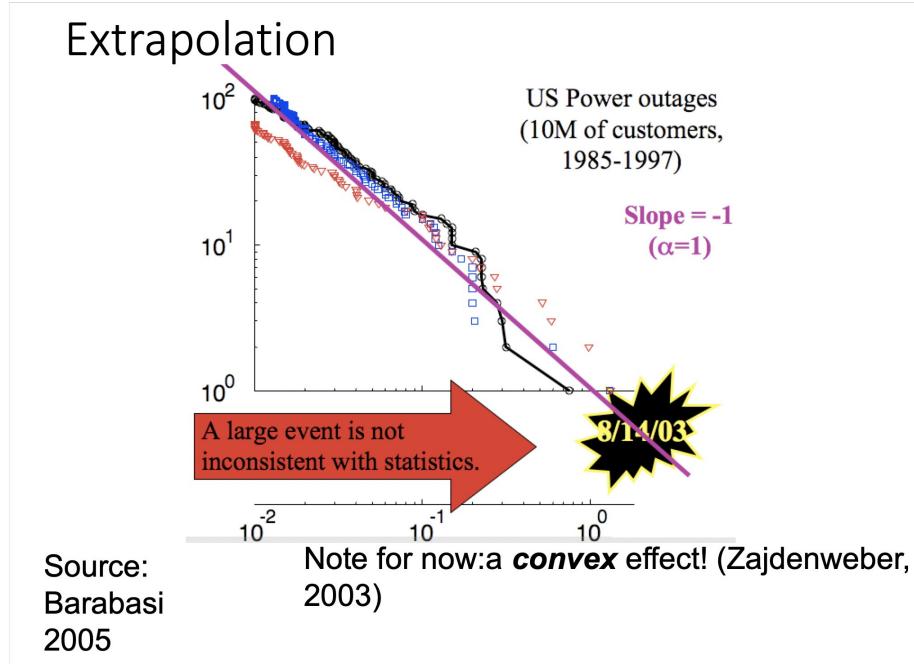
Fig 2. Power Law of Urban Scaling

Fig 2 illustrates the power of scaling. The red line has  $\beta = 0.15$  and the green half of this,  $\beta = 0.075$ . Both are cases of *positive* or *superlinear* scaling. For comparison  $\beta$  can also be negative (sublinear), i.e. larger cities have smaller effects, as illustrated on the figure with  $\beta = 0.85$  (blue line).

A scaling factor of  $\beta = 0.15$  is fairly strong: An urban area with 5 times the population - 1 million people compared to another with 200.000 people - has the double Social Contact Intensity. 10 times the population (2 million people) gives 4 times the intensity.

‘Social Contact Intensity’ - as we use it here - is an umbrella term. Many aspects of social and economic activity within urban areas will follow such power laws. Many empirical studies find power laws with  $\beta$  around 1.1 - 1.2 as a general characteristic. As Bettencourt puts it: ‘Cities primary function is open-ended social reactors... [which] exist in similar, but changing forms over a huge range of scales... [and] evolve according to a small set of principles that operate locally... [so that] the average social, spatial, and infrastructural properties of cities... [follow] scaling relations that apply to all urban systems.’ .

## 5.4 Urban Catastrophes



The probabilities of electricity blackouts may be influenced by the sizes of cities more than by the details of power grids.

Electric power blackouts can occur on all scales, from local outages to country-wide failures. The probability of a given event depends on the size of the region it affects, according to a mathematical relationship called a power law. The reason for the power law hasn't been clear, but a new model suggests that it results from the same kind of distribution in the sizes of cities [1]. The model's creators say that understanding the factors that influence blackout probabilities could help engineers make electricity grids more robust.

Ball (2020) City Size Blackouts

Nesti (2020) Emergence of Scale-Free Blackout Sizes in Power Grids (PayWall)

*TODO* Gabaix, X. (1999). ‘Zipf’s law for cities: an explanation’, Quarterly Journal of Economics, vol. 114(3) (August), pp. 738-67.

Scaling laws are, in the context of complex systems, emergent properties, and so their presence would appear to speak to the empirical relevance of complexity. To the extent that the findings of scaling laws in very different data sets are believable, this can and has (Stanley et al., 2000) been interpreted as evidence of universal properties in economic data. However, the implications of this new literature for economic complexity are still very unclear. The reason for

this is that literature on power and scaling laws has yet to move beyond the development of statistical measures to the analyses of model comparison and evaluation. In other words, many of the empirical claims in this literature concerning the presence of a particular law in some data set fail to address the standard statistical issues of identification and statistical power adequately. Hence, it is difficult to conclude that the findings in this literature can allow one to infer that some economic environment is complex.

Durlauf (2004) Durlauf 2004 Complexity and Empirical Economics ( See recs/320-econophysics)



# 6

## The Urban Organism

Mumford' Mega-Machine Theory



# 7

## End of Urbanization

*Benanav*

Contemporary stagnationists cite a number of tendencies to support their belief that we live in an era in which the growth potential of the economy has ratcheted downward. Robert Gordon, like Smith and Keynes, believes that we have done the main work of equipping rich Western societies with plant and equipment, as signaled by **the end of urbanization**, that is, the end of the build-out of residential construction.

Benanav (2023) We're All Stagnationists Now



# 8

## Conurbations

### 8.1 Africa

*Tooz*e

At independence in 1957, at the beginning of its trajectory of repeated renegotiations with the IMF, Ghana's population was roughly 6 million. Today Ghanas's population is 33 million, more than five times larger. Ghana's capital Accra is now one of the hubs in a giant conurbation that stretches from Abidjan in Ivory Coast to Lagos in Nigeria.

Tooz (2022) Chartbook #181: Finance and the polycrisis (6): Africa's debt crisis



# 9

## Density

*Density is not the enemy*

Vertical, centralized density = bad  
Broad, decentralized human scaled density = good  
No one wants blade runner cities  
(twitter)

### 9.1 Agglomeration effects

*Smith*

Agglomeration effects are pretty simple to understand. Companies want to be located close to their customers, workers, and suppliers. People — who are both workers and customers — want to be located close to their employers and to the companies that sell them stuff. And financial capital wants to send money to where companies are locating their factories and offices. Taken all together, these effects are a powerful reason that cities exist, and that economic activity clusters in certain countries. When you add in clustering effects — the tendency of companies in the same industry to locate nearby to each other — the effect on the concentration becomes even more powerful.

Agglomeration in a particular region tends to have a “break point”, where a rapid snowballing of economic growth suddenly comes into effect. This explains why Asia’s growth in general has looked unstoppable in recent decades — the region has become the workshop of the world.

[Smith (2023) Here comes India](<https://www.noahpinion.blog/p/herecomesindia>



# 10

## High Rise Building

### 10.1 Technological Hurdles



Swinging in the Wind: Billionaire's Row *Source:* Wikipedia

The nearly 1,400-foot tower at 432 Park Avenue, briefly the tallest residential building in the world, was the pinnacle of New York's luxury condo boom half a decade ago, fueled largely by foreign buyers seeking discretion and big returns.

Six years later, residents of the exclusive tower are now at odds with the developers, and each other, making clear that even multimillion-dollar price tags do not

guarantee problem-free living. The claims include millions of dollars of water damage from plumbing and mechanical issues; frequent elevator malfunctions; and walls that creak like the galley of a ship — all of which may be connected to the building's main selling point: its immense height.

Less than a decade after a spate of record-breaking condo towers reached new heights in New York concerns are raised that some of the construction methods and materials used have not lived up to the engineering breakthroughs that only recently enabled 1,000-foot-high trophy apartments. All buildings sway in the wind, but at exceptional heights, those forces are stronger.

Billionaire's Row is a stretch of supertall towers near Central Park that redefined the city skyline, and where the identities of virtually all the buyers were concealed by shell companies.

NY Times

# 11

## Human Settlements

### 11.1 Organization of Life

Life consists of units within units. In the biological world, we have genes, individuals, groups, species, and ecosystems – all nested within the biosphere. In the human world, we have genes, individuals, families, villages and cities, provinces, and nations – all nested within the global village. In both worlds, a problem lurks at every rung of the ladder: a potential conflict between the interests of the lower-level units and the welfare of the higher-level units. What's good for me can be bad for my family. What's good for my family can be bad for my village, and so on, all the way up to what's good for my nation can be bad for the global village.

For most of human existence, until a scant 10 or 15 thousand years ago, the human ladder was truncated. All groups were small groups whose members knew each other as individuals. These groups were loosely organized into tribes of a few thousand people, but cities, provinces, and nations were unknown.

Today, over half the earth's population resides in cities and the most populous nations teem with billions of people, but groups the size of villages still deserve a special status. They are the social units that we are genetically adapted to live within and they can provide a blueprint for larger social units, including the largest of them all – the global village of nations.

Every once in a great while, the good manage to decisively suppress selfishness within their ranks. Then something extraordinary happens. The group becomes a higher-level organism.

The idea that trust requires social control is paradoxical because social control is not trusting. Nevertheless, social control creates an environment in which trust can flourish. When we know that others cannot harm us, thanks to a strong system of social controls, then we can express our positive emotions and actions

toward others to their full extent: helping because we want to, not because we are forced to. When we feel threatened by those around us, due to a lack of social control, we withhold our positive emotions and actions like a snail withdrawing into its shell.

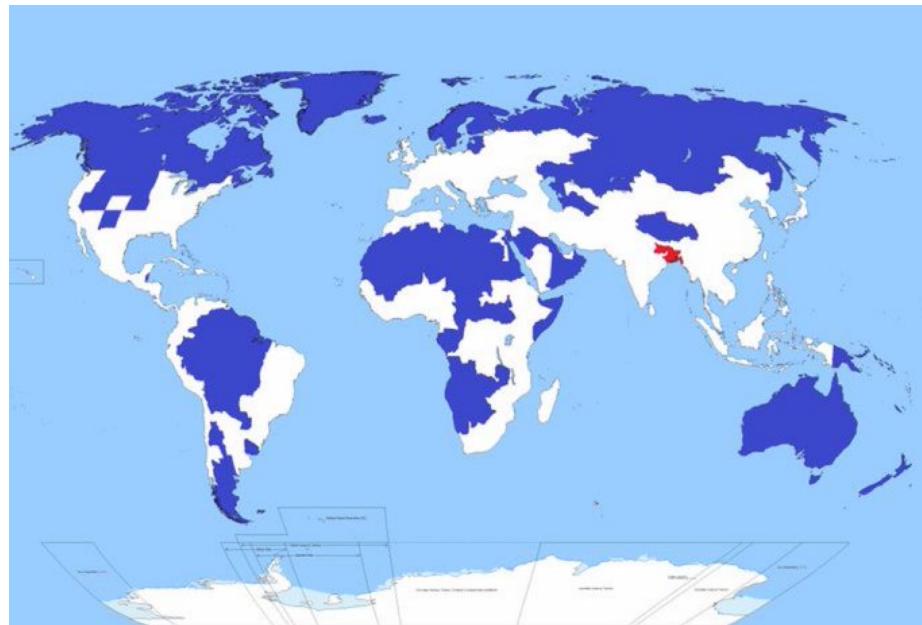
There is evidence that village-like social controls are starting to form at larger scales without the help of governments. In the United States, a nonprofit organization called B-lab (B stands for benefit) provides a certification service for corporations. Those that apply for certification receive a score on the basis of a detailed examination. If the score exceeds a certain value, then the company is permitted to advertise itself as a B-Corporation.

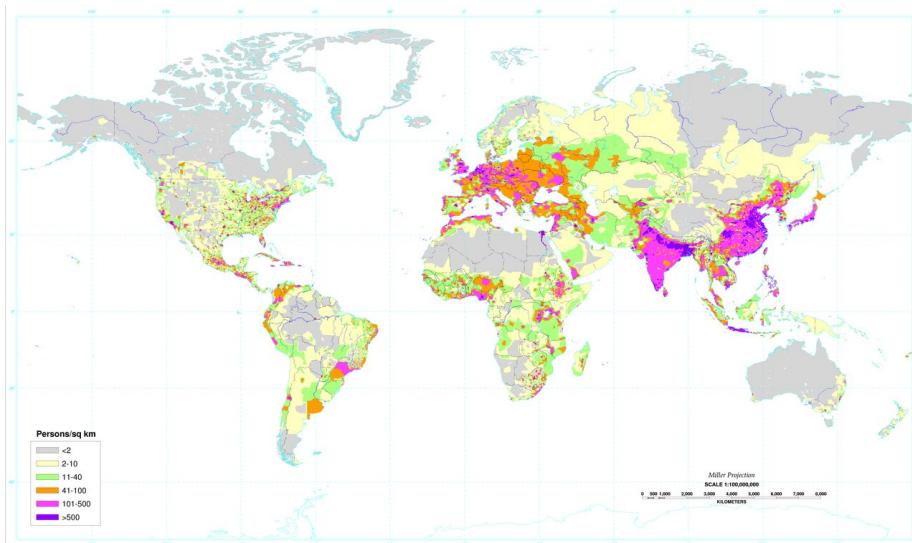
Wilson aand Hessen

## 11.2 Population Density

Population density unevenness.

5% of humans in the blue - 5% in the red - 90% in the white







# 12

## Suburbia

Previous mainstays of suburban life are now myths: that the majority of people own their homes; that the suburbs are havens for the middle class; or that the bulk of people are young families who value privacy over urban amenities like communal spaces, walkability, and mixed-use properties.

This mismatch has led to a phenomenon called “suburban retrofitting”.

When the suburbs are retrofitted, they can take on an astonishing array of modern issues: car dependency, public health, supporting aging people, helping people compete for jobs, creating water and energy resilience, and helping with social equity and justice.

Retrofitting Suburbia



# 13

## Urban Energy

*Smil*

“There’s no doubt about the consequence of urbanization for energy consumption; living in cities requires substantial increases in per capita provision of energy even in the absence of heavy industries or large ports...”

(Vaclav Smil (ref. unknown))



# 14

## Urban land expansion

### *Gao Abstract*

Urban land expansion is one of the most visible, irreversible, and rapid types of land cover/ land use change in contemporary human history, and is a key driver for many environmental and societal changes across scales. Yet spatial projections of how much and where it may occur are often limited to short-term futures and small geographic areas. Here we produce a first empirically-grounded set of global, spatial urban land projections over the 21st century. We use a data-science approach exploiting 15 diverse datasets, including a newly available 40-year global time series of fine-spatial-resolution remote sensing observations. We find the global total amount of urban land could increase by a factor of 1.8–5.9, and the per capita amount by a factor of 1.1–4.9, across different socioeconomic scenarios over the century. Though the fastest urban land expansion occurs in Africa and Asia, the developed world experiences a similarly large amount of new development.

### *Gao Memo*

Gao (2020) Mapping global urban land for the 21st century with data-driven simulations and Shared Socioeconomic Pathways (pdf)



# 15

## Urban Transport

### 15.1 The Death of American Urban Transit

*Zipper*

In his new book, historian Nicholas Dagen Bloom chronicles the collapse of public transportation in US cities — and explains who really deserves the blame.

It's mind-blowing to consider just how good transit service (public transport) once was (in American cities). You wrote about how 100 years ago, dozens of Chicago's streetcar lines operated throughout the night, often with 8- to 10-minute headways. What was the rationale for streetcar companies to provide so much service?

Well, the streetcar companies had the customers. They had an effective monopoly on mobility because people either had to use their feet or the streetcar. The motorcars were still for the elite at that time, and there wasn't a lot of space for them. So the streetcar companies could profitably collect nickels and dimes, running service all through the night at those kinds of levels.

In the United States, we're used to thinking of transit as requiring ongoing and substantial taxpayer subsidies. But in the book you explained that a century ago, transit was mostly privately provided. And it was quite profitable. How was it such a moneymaker?

Yeah, it was a very profitable business. But the money was never really in the mobility, per se; the money was in the aligned real estate investments. The streetcar lines shortened the time it took for people to travel from city centers or industrial areas and residential areas. By shortening that time, you opened up an empire of land around cities.

Zipper (2023) Anatomy of an 'American Transit Disaster'



# 16

## Urban Planning

I always hear “It is too expensive to build nice things anymore!” which is getting things the wrong way around: what is actually too expensive is to keep building ugly things, places off no value or no meaning, disposable buildings. Nothing is cheaper in the long run than beauty. (?)

Urban design offers countless examples of engineering solutions gone wrong. During the last century, transportation designers responded to traffic congestion by building more roads, bigger roads, smoother roads, freeways, roundabouts, and so forth. This approach led to cities designed for cars and produced greater congestion. The engineering mindset failed to consider the deeper, systemic context.

Cars were a dubious idea in the first place, and the car culture was promoted by profiteers, not by a wise assessment of transportation options. In the 1930s, Standard Oil, General Motors, and Firestone Tire created a U.S. company, National City Lines, that bought public transportation systems and sabotaged them. They literally tore out light rail tracks and lobbied and bribed government officials around the world to build roads at public expense. Much of the world adopted a private car culture because that system benefited a few business elites, who wanted to increase profits. The engineering may have been brilliant, but the fundamental assumptions were wrong, or at least incomplete.

Wicked Complexity

### 16.1 Public Space

*Barcelona*

Residences and businesses and roads will get you urbanity, but to make a city requires public spaces — “the public’s living room”. (Salvador Rueda)

*The American Lawn*

In the dominant American suburban model, wherein everyone lives in their own separate dwelling, there's no way to maintain vibrant public spaces — everyone's too spread out — so everyone basically has to recreate the benefits of public spaces in their own private estate.

The promise of the American suburban dream is that we don't need a public — that the nuclear family can be sufficient unto itself.

The suburban dream of post-war America was that every white man could join the middle class and afford his own mini feudal estate, complete with its own stable (garage), its own compliant staff (wife and kids), and its own ornamental lawn.

We're trying to compensate for the lack of a public by accumulating more and more private stuff. It doesn't work.

It's all so dumb. This is the thing I hate most about suburbia — it makes the people who live in it, myself included, enthusiastic participants in their own alienation.

People need spontaneous mixing. Research shows it is the primary way humans form friendships (which is why so many professional-class Americans make life-long friends in college, when they are forced into close proximity). The number and depth of social connections is a reliable indicator of physical health, psychological health, and longevity. Loneliness and isolation kill.

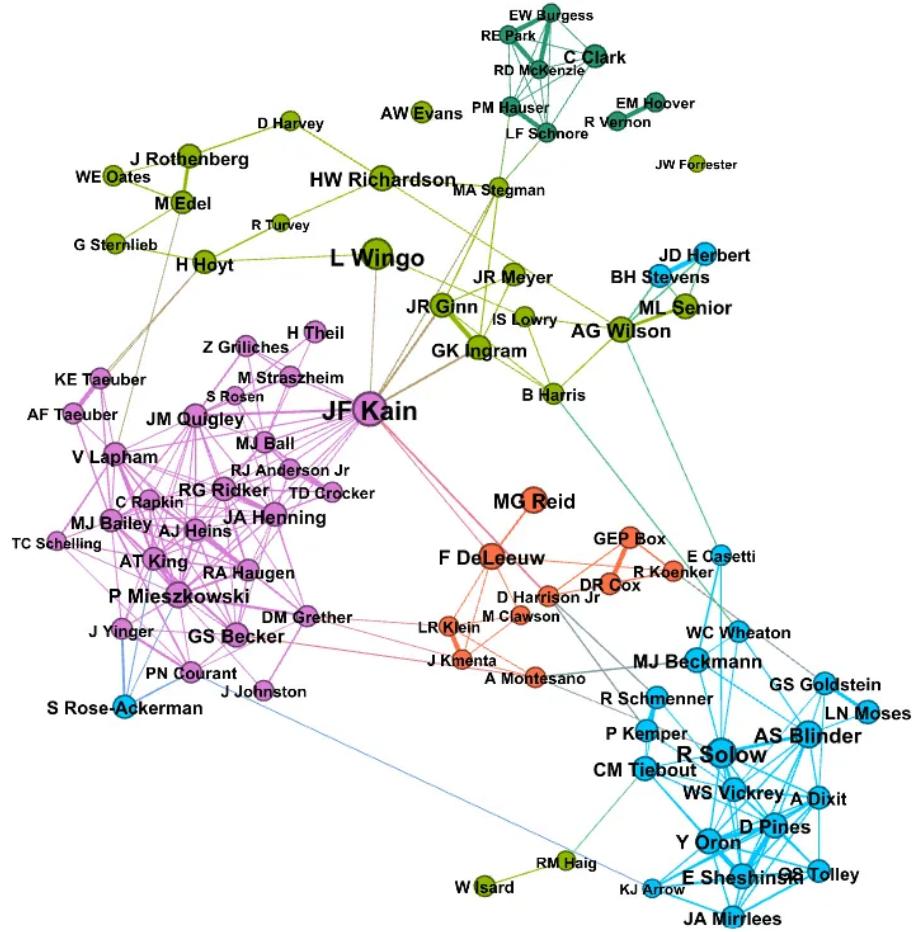
Roberts

**17**

## Urban Economics

Considering the city as an object of analysis for economists is fairly recent: a thread on the history of US-born urban economics.

Beatrice Cherrier (twitter thread)



*Fig: Cocitaion 1975-1979*

“Urban economics looks just like macroeconomics to me,” one commenter writes, “fragmented, with many professional associations and fora. I don’t see fields that would be more unified. Development? IO?” I have sometimes thought of urban economics as equivocal, a bustling field in the 1960s, almost disappeared in the 1980s, which then became a province of geographical economics only to reclaim a distinctive identity 10 years ago. And I view macroeconomics as just the opposite: uncontested objects (aggregate unemployment, inflation, business cycles), a changing but well-defined set of models and tools, members who unambiguously identify as macroeconomists, boundaries. When microeconomists showed impatience with macro models in the 1980s and 1990s and sought to explain the high level of aggregate wealth in the US and UK through looking at demography, precautionary savings or various types of heterogeneity, they knew they were trespassing. But for Paul Krugman, urban economics at the turn of the 1990s was just a small “peripheral field,” and what mattered was space and

agglomeration, not the city. No need to knock at the field's door.

"As I read through your material," another commenter counters, "I come away with the impression that what you call urban is usually little more than a topic within some other, often slightly more established, field/branch of economics: labor, public finance, development." There's some truth to this, for sure. A lot of urban economics in the 1960s and 1970s was local public finance; it was about market failures, federalism, Tiebout sorting, land taxes and Henri George theorems.

The topics discussed in urban economics seminars have changed: suburbanization in the 1950s, segregation, pollution and congestion in the 1960s and 1970s, gentrification, urban sprawl, edge cities and crime in the 1980s and 1990s. The methods have changed as well: from partial to general equilibrium and monopolistic competition models in theory. From gravity models to hedonic pricing and discrete choice models to shift-share IVs. But all these methods have been imported. What tool did urban economics ever export, or produced for itself?

So I'm left with an evergreen question: when is an economic field a "field," and not just a "topic"?

"The city" was not a topic economists thought that they had much to say about, before the 1950s.

Urban had the Alonso-Muth-Mills model monocentric model, but it wasn't a general equilibrium model explaining location and land rent, the size of cities, their boundaries. Residential economists succeeded where urban economists at large failed, with the Rosen-Roback model.

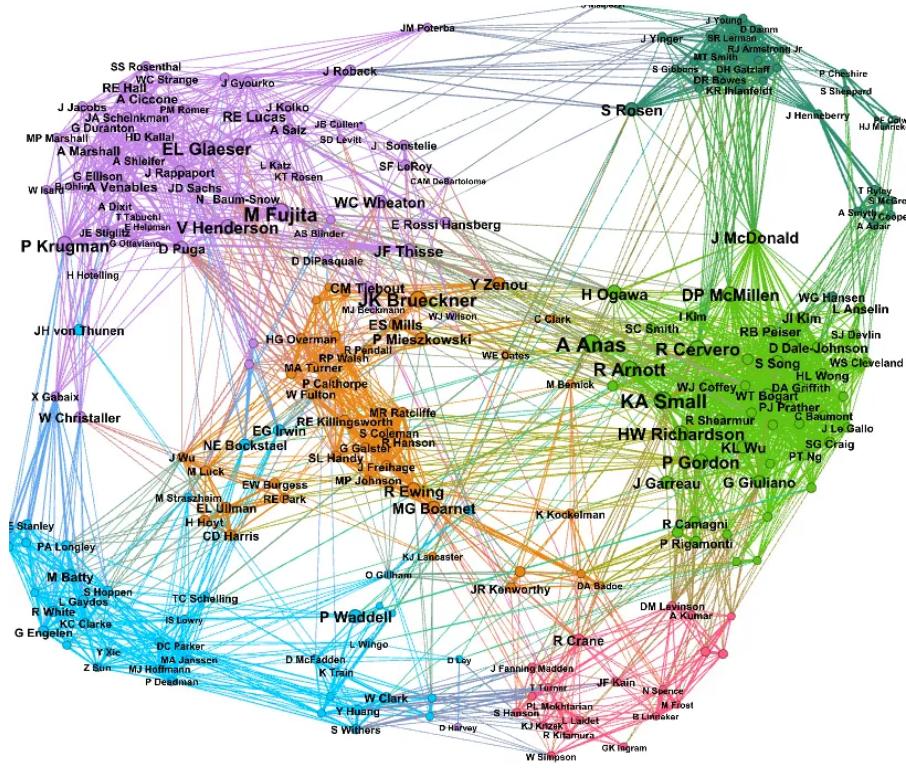


Fig: Cocitation 2005-2009

What these networks and the archives we pair them with show is a phenomenon that I had never carefully thought about: the coexistence of contributors who would call themselves urban economists (Kain, Mills, Quigley, Wingo, Richardson, Henderson, Fujita, Brueckner, Arnott, Anas, Glaeser among others) with visitors from other fields. Some never really meant to contribute to urban, their work became relevant as they help urban economists to address specific issues (Tiebout, Becker, Schelling, Reid, Rosen), but other purposively entered the field at some point, with the goal of proposing a workhorse model that answers key questions about the structure, size or location of cities, or their hierarchies. Solow and Mirrlees did so in the 1970s (and failed). Krugman did in the 1990s and succeeded in subsuming urban economics into his New Economic Geography. At least for a while. Recently, some economists have reclaimed the city as a distinctive object.

Undercoverhistorian (2022) I spend a lot of time chasing the history of economic “fields.” Maybe I shouldn’t

## 17.1 Neoliberal Planning

*Garza*

The main difference between academic mainstream Economics and Urban Planning is methodological, in terms of what is considered a valid approach to scientific knowledge. Economics builds upon logical positivism; it first performs deductive theory construction that “describes” reality, and then subsequently tests its theoretical predictions, which in some cases (not all the cases) lead to policy prescriptions. In contrast, Urban Planning is an action-oriented and problem-solving scientific discipline. It inductively produces normative theory, which explicitly shows the analyst’s point of view regarding the topic and how to intervene on it (public policy advice).

Mainstream Economics is in essence defined by the method and theoretical approach, not by the topic (the economy). This allows it to engage with a wide variety of topics, one of them being the spatial analysis of the built environment, which is also the topic of academic Urban Planning.

### Neoclassical urban planning

When mainstream economics meets urban planning, we get a peculiar approach to understanding the built environment, which I call “Neoclassical Urban Planning”. The first stage of this approach entails the development of abstract theoretical models of cities’ spatial structure. These models use clearly defined property rights and rational behavior assumptions to deductively determine the “optimal” spatial distribution of economic activities, real estate values and structural densities. In the second stage, real-world problems like transport congestion or housing unaffordability, are treated as “deviations” from this spatial optimum. Economists can offer policy advice, only after comparing real-world cases to the optimum as an ideal benchmark. That contrasts with planners’ approach, describing the spatial structure of actual cities and their corresponding problems, with their normative benchmark based on perceived reality.

The empirical research agenda in mainstream urban economics systematically tests and builds upon its abstract theoretical models, and it is generally believed to be exempt from normative value judgements. However, the methodology employed by economists does build upon a crucial value judgment: competitive markets are the comparison benchmark with the highest economic well-being. This is the case, even in fields of neoclassical research that engage with market failures, like industrial organization, endogenous growth theory, and economic geography.

In the case of Urban Economics, the normative benchmark for economists is spatial general equilibrium in perfect competition with perfect information, determined by agents’ willingness to pay for different locations with given revenue and transportation costs. This is the benchmark against which to compare real-world spatial outcomes, and towards which these economists’ policy advice wants to nudge the urban economy.

### **From Neoclassical Urban Planning to Neoliberal Urbanism**

Urban Planning scholars have identified that Neoclassical Urban Economics is normative in the above-described sense. However, these scholars do not exactly define it in the terms I do here: pushing the urban economy towards its competitive spatial general equilibrium using public policy tools, for example: demand-side housing subsidies, property tax abatements, interest rate subsidies, or the de-regulation of construction, environmental and urbanistic requirements. Urban Planning scholars tend to summarize this type of public policies as Neoliberal Urbanism, which in the case of developing countries has become predominant since around the 1990s. Before that, and with the support of multilateral organizations and donors, urban planners in developing countries tried to exercise planning in the proper sense of the term: elaborating and reflecting about strategic and large-scale metropolitan plans, which were attempts at pre-determining the spatial structures, quality of the built environment, and construction styles, in advance to the operation (or lack thereof) of the real estate markets.

During the neoliberal era, the role of planners has been changed into facilitators of market-led urban development. The corresponding scholarship has accommodated this new development narrative by replacing its metropolitan grand-scale and strategy approach, with the impact assessment of public policy actions. The original attempts at large-scale socio-spatial transformation using planning tools have been diminished. After all, and following what described above, planning is government intervention that might shift the urban economy away from its market-determined optimum.

#### **After 30 years of neoliberal urbanism... where are we now?**

After more than 30 years of neoliberal urbanism it is unclear if developing countries' cities have had a better socio-economic performance, or if their spatial structures and interactions are more efficient. In the jargon of Neoclassical Urban Economics, it is unclear if they have moved closer to their normative benchmark: the optimal spatial general equilibrium. Perhaps the reason is that this benchmark is an abstract theoretical construction in the first place, which in addition might be unachievable according to the second-best theorem, a feature conveniently forgotten by some neoclassical economists.

Another possibility is that market forces are in fact pushing individuals closer towards their individual optimum. Let us be reminded that developing countries' cities have extensive informal markets of labor, transportation, and real estate, which by definition are non-regulated or taxed. Therefore, in the neoclassical logic, these would be free markets converging towards general equilibrium, with individuals efficiently responding to market incentives. Such is the romantic view of some neoclassical analysts, who forget that these urban inhabitants are "optimizing" while exposed to extreme information asymmetries, non-convexity (low liquidity) of real estate assets, and externalities (pollution, congestion, criminality). Accumulated empirical research does not signal that urban efficiency

has improved anywhere during the last 30 years.

In contrast to the approach of neoclassical urbanism, urban planners explicitly state their normative view and policy objectives (ideological in the jargon of mainstream economics). For example, planners state the need for government-provided or government-funded housing, to alleviate its scarcity; also, they propose inclusionary zoning, in fighting spatial segregation. Such plans and objectives do not require any abstract comparative benchmark, but explicit real-world comparisons and metrics, even if they seem biased or simplistic in the eyes of neoclassical economics.

(See link below for a reference list next entry for background article)

Garza (2023) Neoclassical Economics and Urban Planning: A Contentious Theoretical and Policy Making Relationship

*Garza Abstract*

This article presents the one-sided intellectual influence of Economics on Urban Studies & Planning, the case of two social science disciplines with different epistemologies and approaches to policy advice. Subsequently, it presents the emergence of the so-called evidence based policy (EBP) approach in Economics, comprising experimental (randomized control trial) and quasi-experimental (difference-in-differences and propensity score matching) methods. The article shows that even though EBP claims to be exempt from normative/political, and even theoretical, considerations, it builds upon two features of neoclassical economics: sufficiency and separability. These conditions comprise its normative neoclassical theory background. We discuss the neoliberal turn in development narratives and their influence on urban planning, which coincides with the emergence of EBP. We analyze some EBP examples in the urban planning scholarship.

*Garza Memo*

EBP hides or denies its own neoclassical theory background, built upon the conditions of *sufficiency* and *separability*. These two features are derived from the modularity and normative approach of neoclassical economics. EBP builds upon neoclassical economics not only in methodological terms, but also in terms of its normative content: pure competition general equilibrium as the comparison benchmark against which to compare real-world cases, where experiments can reveal individuals' preferences. This is a static-comparative normative framework, which in dynamic terms neglects the structural change that defines processes of economic development at the national and regional scale.

The influence of traditional neoclassical urban economics and the growing importance of EBP on the academic literature in Urban Studies & Planning coincides with its neoliberal turn. That is, a movement toward the logic of "small fixes," and away from the larger "meta-narratives" in both Development Economics and Urban Planning, dismissed as unnecessary or unmanageable.

Garza (2023) Urban strategy in an era of public policy assessment: Beyond the methodological divide

# 18

## Rent Gap

- Abstract Clark:<sup>\*</sup>

The seeking of potential rents directs flows of investment into built and natural environments, suffusing volatility into urban and rural landscapes, generating gentrification and other forms of land use change, and displacing lives and livelihoods to make space for ‘improvement’, ‘highest and best use’, ‘revitalization’, or the like. In this paper we argue that potential rents are captured at the cost of potential lives, and that rent gap theory, long central (and limited) to gentrification theory, is more widely applicable to the dynamics of land use change and uneven geographical development in capitalist societies. By reading David Harvey’s analyses of rent and accumulation by dispossession as a sophisticated formulation of rent gap theory, we relate the seeking and capturing of potential rents to the power of landed developer interests and a broadened conceptualization of rentiership. We furthermore relate the seeking of potential rents to an ideology of limitless accumulation, and the striving to rein in potential rents to ideas of degrowth and the need for a culture and a politics of limits. Brief vignettes from the ‘primary sector’ (fisheries in the Baltic Sea, dairy farming in Europe, and small-scale farming in Sweden) suggestively illustrate our central argument that the seeking and capturing of potential rents stand in stark opposition to potentials for wellbeing and flourishing of human and non-human lives. We conclude that constraining potential rents – founded as they are on faith in limitless growth – requires a culture of self-limitation and politically imposed limitations commensurable with post-capitalist societies.

Clark (2020) Potential Rents vs. Potential Lives (pdf)



# 19

## Urban Africa

### 19.1 Africa's Urban Fantasies

*Watson Abstract*

Labelled as the “last frontier” for international property development, sub-Saharan Africa’s larger cities are currently being revised in the image of cities such as Dubai, Shanghai and Singapore, which claim top positions in the world-class city leagues. Draped in the rhetoric of “smart cities” and “eco-cities”, these plans promise to modernize African cities and turn them into gateways for international investors and showpieces for ambitious politicians. Yet the reality in all of these cities stands in stark contrast to the glass-box towers, manicured lawns and water features on developers’ and architects’ websites. With the majority of urban populations living in deep poverty and with minimal urban services, the most likely outcome of these fantasy plans is a steady worsening of the marginalization and inequalities that already beset these cities.

Watson (2013) African urban fantasies: dreams or nightmares?

### 19.2 Cotonou

*Noret*

Since 2017, Cotonou – the economic capital of Benin – has witnessed several urban development projects. Aiming to showcase the city as the new face of a new Benin, attractive to both businessmen and tourists, the plans have involved extensive tarmacking projects, the development of the city’s first shopping malls, the rebuilding of several markets to ‘modern’ standards, the erection of emblematic statues – notably that of ‘the Amazon’, branded as an ode to feminine courage and a national emblem –, and the design of a new coast line. The urban poor have paid a disproportionate price in the implementation of this new

urban fantasy – that is, a shiny urban renovation project disconnected from the sociological realities of the city and from the needs of whole swathes of its population, especially in the urban precariat.

Noret (2023) The city of the evicted: lives under pressure in the margins of an urban fantasy in Benin

# 20

## China

*Roberts*

It was a big mistake by the Chinese CP leaders to adopt the Western capitalist model for urban development.

Instead of putting housing construction into the public sector to build homes at reasonable rents for the hundreds of millions of Chinese who have moved into the cities to work, the government allowed private developers (with billionaire owners) to do the job and now the result is a classic debt-driven bubble that has burst.

Roberts (2023) Xi meets Biden

*Smith*

China has generally chosen a different approach to urbanism from other Asian countries. It's more car-centric, with lots of giant highways and thoroughfares. The retail tends to be clustered in malls or other giant showpiece shopping centers rather than along walkable streets. Residential areas tend to be far from retail and commercial areas, clustered in ultra-high-density "superblocks". This form of development has sometimes been referred to as "high-density sprawl".

You can really see this when you look at ground-level videos of Chinese cities. Foot traffic tends to be concentrated in shopping malls or dedicated promenades, while the centers of cities are dominated by huge roads filled with cars. What walkable mixed-use pedestrian-friendly areas do exist tend to be very old, like Shanghai's Bund and Old City. The skyscrapers and bridges do have plenty of spectacular LEDs on them — LED lighting has become very cheap in recent years — but this is perhaps necessary to break up the imposing, impersonal scale of these cities.

The reason these cities look like they were built for giants instead of people is that...well, they were. The "giants" here are corporations. As Michael Pettis

would probably tell you, China over the last three decades has been a producer-centric economy, where the needs of construction companies and developers outweigh the needs of consumers. Giant skyscrapers and highways and concrete promenades and bridges and malls maximized the throughput of Chinese companies, so that's what got built.

This type of urbanism surely showcases vast production capacity, but that doesn't mean it necessarily makes Chinese cities amazing places to live, when compared with other Asian cities.

The other thing these videos neglect is capital depreciation. The more you build, the more you have to maintain. In 20 years, these glittering new buildings and infrastructure will begin to show their age; at that point, China's government will have the choice to spend a lot of GDP upkeeping and rebuilding them (as Japan and Korea do) or letting them start to look a bit shabby, worn, and old on the outside (as Taiwan, Hong Kong, and the United States do).

Depreciation isn't a mistake on China's part; every country has to deal with it. But the cycle of new construction followed by depreciation does seem to give a lot of American visitors a very predictably biased impression of whether a country is "rising" or "declining". In general, a city that looks like the "city of the future" is just one that was recently built.

Smith (2023) China Urbanism

# 21

## Singapore

*Smith*

### 21.1 Housing

There's one important regard in which Singapore is leaving Ireland in the dust, and that's housing. The reason Singapore has all of this housing, of course, is the country's fabled "public" housing policy.

The government of Singapore owns most of the land, and has a government agency called the Housing Development Board (HDB) that builds a ton of housing. It then sells this housing, mostly to first-time homebuyers (i.e. young people), at a cheap price. who are then free to resell it. The combination of the discount for first-time buyers and the government's ability to make prices appreciate slowly and steadily over time means that HDB apartments function not just as a cheap place to live, but also as a sort of wealth-building pension system. In other words, in Singapore there's no contradiction between using your home as a place to live in, and using it to build wealth!

The government doesn't actually sell HDB apartments to people; it sells them 99-year leases. If a lease has 98 years left on it, that's pretty close to ownership, and so when Singapore's system started out, it was basically a homeownership system (in fact, Singaporean homes that are called "freehold", or privately owned, are technically on 999-year leases!).

Remember that Singapore was founded in 1965, so no 99-year leases have had time to expire yet. But in a few more decades, it'll become a big pain in the neck, since people whose leases expire will have to move to new apartments. And people are now starting to think about that day, which is messing up the market for leases and causing some apartments to start depreciating.

Singapore's HDB system is an absolutely amazing solution to the housing problems that afflict most other nations. Basically, the government owning and developing the land allows it to control housing supply so as to produce abundant affordable housing and predictable slow appreciation.

Smith (2023) Singapore Urbanism

## 22

# Urban Research

### 22.1 Jane Jacobs

Considering her contribution to economic theory may seem counter-intuitive. In addition to lacking academic credentials, she took little interest in engaging the discipline of economics. Her models were neither formal nor developed in reference to existing models. And her view of economic theory in general was dismissive. In the opening chapter of *Cities and The Wealth of Nations*, “Fool’s paradise,” Jacobs lays out a history of economic thought and arrives at this sweeping conclusion: “Choosing among the existing schools of thought is bootless. We are on our own.” The same dismissive stance extended to academic institutions, as she refused numerous honorary degrees from various Universities.

#### Jacobs Externalities

Some economists picked up on her insights. A type of economic externality has been derived from her detailed historical accounts of new economic activities arising from urban diversity. Chicago and Harvard urban economists Glaeser, Kallal, Scheinkman, and Shleifer credited Jacobs in 1992 for identifying cross-industry knowledge transfers, which they dubbed “Jacobs externalities.” The concept was based on Jacobs’ *The Economy of Cities* and posits that knowledge transfer occur between different industries, and that local competition supports economic growth.

This came four years after future Nobel prize recipient Robert Lucas pointed to Jacobs’ work while investigating the external effects of human capital in his 1988 article *On the Mechanics of Economic Development*, although without formalizing his insight. Lucas’ endorsement earned Jacobs increasing recognition among economists over the following decades. Paul Krugman described her as a “patron saint of the new growth theory” and her unusual status was summed up

by Robert Dimand and Robert Koehn who saw her as “her own distinctive kind of political economist ... an exceptional instance of a woman without academic affiliation or university training achieving recognition among leading academic economists”. And a considerable literature grew up after Glaeser et al.’s piece. Despite this interest in her work, extended reassessments of her contribution to economic thought have yet to appear.

The city economy model, first developed in *The Economy of Cities*, argues that the desirable diversification of local economic activities depends largely on the destination of goods and services entering the city’s economy. The key claim is that imports are key to economic development: they embody knowledge and allow further diversifications in the local economy, as imports are gradually replaced by local supply, and make “room” for new imports – in a similar manner to import substitution. Jacobs uses this model to stress the long-term undesirability of overspecialization derived from a focus on maximizing exports, and the importance of a large and diverse local economy – ultimately delivering a critique of comparative advantages as an organizing principle of trade.

The more niches that are filled in a given natural ecology, other things being equal, the more efficiently it uses the energy it has at its disposal ... That is another way of saying that economies producing diversely and amply for their own people and producers, as well as for others, are better off than specialized economies ...

The most elaborate study of Jacobs’ use of biological and ecological analogies is provided in mathematician and philosopher David Ellerman’s paper *How Do We Grow? Jane Jacobs on Diversification and Specialization* (2005).

Depicting the city economy’s boundaries as an open system governed by evolutionary dynamics: “development is a conceptualized form of social learning.” Incoming goods, the products of foreign know-how, are vectors of developmental learning. And exports of commodities and services fund these imports. When imports feed into the somewhat enclaved export economy (i.e. overspecialized), they have a lesser effect than when they are dissipated in local consumption.

Following Geoffrey Hodgson’s taxonomy in *Economics and Evolution* (1993), part of Jacobs’ system could be characterized as phylogenetic and non-consummatory, that is, as exhibiting an open-ended process of evolutionary selection among a population of firms and individuals.

Jacobs targeted development schemes developed by the World Bank. She pointed to the inherent weaknesses of Robert McNamara’s development strategies for addressing “basic human needs” (literacy, nutrition, reduction in infant mortality, and health) of poor populations. She argued that because economic development is a process, it cannot be thought of as a “collection of things” which can be bought or provided. The “basic human needs approach” ignored the necessity for solvent markets to support increased agricultural yields and the populations that were being displaced. As they could no longer rely on agricultural work to sustain themselves, displaced workers failed to

find jobs in nearby city economies, where labor markets had not evolved alongside the increased agricultural yields through a succession of appropriate feedback mechanisms triggering the needed corrections. And she made the same argument against technology transfers in the “Green Revolution” of the 1960s and 1970s.

The mechanism of feedback relationships is one example among others of Jacobs' usage of systemic concepts to draw boundaries around the city economy as a system and elaborate on its behavior. Further examination of Jacobs' use of these concepts within the paradigm she adopted may reveal a consistent link between her analysis of cities as economic units and the policies she is tended to critique. In short, future attempts at more comprehensive interpretations of Jacobs' economic thought might benefit from stepping away from the urban focus of *The Death and Life of Great American Cities* while considering more carefully her later economic writings.

Divry on Jacobs

## 22.2 Regional Science

### *Rebours*

The history of regional science offers an interesting case study, as well as a one of the few examples, of the institutionalization of an entirely new scientific field in the years after 1945. Its foundation by Walter Isard and a group of social scientists in the 1950s represents the most institutionalized attempt to stimulate the relationship between economics and geography. The original project of Isard, who was trained as an economist at Harvard, was to promote the study of location and regional problems.

And at the outset, regional science was, in various ways, a success. It attracted many scholars from different disciplines, mostly economics, geography and urban/regional planning, and it quickly became institutionalized formally through the foundation of the Regional Science Association (RSA) in 1954 and establishment of a Regional Science Department at the University of Pennsylvania in 1958. At the same time, the creation of the Papers and Proceedings of The Regional Science Association in 1955 and of the Journal of Regional Science in 1958, offered new publication venues for scholars interested in location analysis, in particular quantitative geographers who found it difficult to publish in traditional geography journals. Within economics, regional science influenced analytical works in urban economics, as, for instance, William Alonso's thesis, widely recognized as one of the foundational works of urban economics, was written at Penn under the supervision of Isard in 1960.

However, the prevailing processes of knowledge production and evaluation which shaped the emergence of this new field were deeply influenced by economics. Geographers became dissatisfied with Isard's vision of the hierarchical division

between geographers and economists, and the primacy given to economic theorizing and modelling as the core of the new regional science. Thus, the social organization of the field of regional science and its interactions with other disciplines mirrored the particularity of economics, a hierarchical discipline organized around a strong theoretical core and an insularity from the rest of social sciences.

In the late 1940s, Isard became increasingly concerned about the lack of interest among economists in the location of economic activities. His perception of the subject was not really different to his colleagues, but he wanted to improve the theory they used, which, following the British tradition of the late 19th century, suffered from a lack of spatial dimension. He did not seek to challenge the general equilibrium economic theory that was becoming dominant, but sought instead to integrate a spatial aspect within it.

In 1949 Isard was recruited to Harvard by Wassily Leontief to develop an input-output approach to regional development. During the war, input-output analysis received much attention because it enabled the American Air Force to identify the best targets for bombing. As a consequence, Leontief had received large research funds to develop his input-output framework.

Isard expressed a hierarchical division between economists, who provided the analytical foundations of regional science, and the geographers, who provided the empirical facts and testing.

While, the identity of economics was legitimated and reinforced by its success during the war, in geography, there was an increasing dissatisfaction with the regional geography approach that dominated the field in the 1950s. The Cold War context facilitated the promotion of a new generation of quantitative geographers looking for more scientific methods.

By the mid-1970s, regional science experienced a progressive decline when geographers started to distance themselves from the analytical methods that were promoted by Isard. But even after the Regional Science Department at Penn closed its doors in 1993, regional science journals remained a going concern and continued to promote studies of spatial issues notably from urban economics and, after 1991, New Economic Geography.

Rebours

## 23

# References

Dyrehaugen Corona Outbreak Analysis

Bettencourt (2013) Origins of Scaling in Cities (pdf) (SM pdf)

[Blasius (2020) Power-law distribution Covid-19] (<https://aip.scitation.org/doi/10.1063/5.0013031>) [(pdf)] (/Blasius\_2020\_Power\_Law\_Covid-19.pdf)

Hugo Whisper Theme used in this Site

Gomez-Lievano (2012) Scaling Zipfs Law (pdf)

Keuschnigg (2019) Scaling Trajectories of Cities (pdf)

Khiali-Miab (2019) Urban Scaling and Polycentricity Switzerland (pdf)

Lucas (1988) On the Mechanics of Economic Development (pdf)

[Naik and Oldfield (2015) Urbanisation as inflicted by Capitalism] (<https://www.citymetric.com/horizons/urbanisation-not-natural-or-inevitable-its-being-inflicted-upon-us-forces-capitalism-900>)

Pumain (2006) Evolutionary Theory of Urban Scaling (pdf)

Romer (1986) Increasing Returns and Long-Run Growth (pdf)

Schläpfer (2014) Scaling of Human Interactions with City Size (pdf)

Stier (2020) COVID-19 attack rate increases with citysize (pdf)



# **Part I**

# **Appendices**



## Appendix A

## About



*Dyre Haugen and Dyrehaugen* is Webian for *Jon Martin* - self-owned Globian, Webian, Norwegian and Canarian with a background from industrial research policy, urban planning and economic development consulting on global, regional and urban scales. I am deeply concerned about the (insane) way humanity (i.e. capitalism) interfere with nature. In an effort to gain insights in how and why this happens stuff is collected from around the web and put together in a linked set of web-sites. The sites are operated as personal notebooks. However, these days things can be easily published to the benefit of others concerned with the same issues. But be aware - this is not polished for presentation or peer-reviewed for exactness. I offer you just to have a look at my ‘work-desk’ as it appears in the moment. Any comment or suggestion can be mailed to [dyrehaugen@gmail.com](mailto:dyrehaugen@gmail.com) You can follow me on twitter as @dyrehaugen. Thanks for visiting!



## Appendix B

# Links

### Current Dyrehaugen Sites:

- rcap - On Capitalism (loc)
- rclm - On Climate Change (loc)
- recs - On Economics (loc)
- rfin - On Finance (loc)
- rngy - On Energy (loc)
- renv - On Environment (loc)
- rsts - On Statistics (loc)
- rurb - On Urbanization (loc)
- rvar - On Varia (loc)
- rwsd - On Wisdom (loc)

### Blogs:

- rde - Blog in English (loc)
- rdn - Blog in Norwegian (loc)

### Discontinued:

- jdt - Collection (Jekyll) (loc)
- hdt - Collection (Hugo) (loc)

### Not listed:

- (q:) dhe dhn jrw56
- (z:) rcsa rpad rstart



## Appendix C

# NEWS

### C.1 210203 Eco-Smart Singapore

In a country where over 80% of residents live in public housing, a government commitment to sustainable urban design could have huge implications. And when it's a tropical country where convenience and air conditioning are a way of life, the impact could be greater still.

Promising 42,000 new homes across five residential districts, the eco-town of Tengah – the Malay word for “middle,” though it’s in the island’s western region – will be the 24th new settlement built by Singapore’s government since World War II. It is, however, the first with centralized cooling, automated trash collection and a car-free town center, which conservationists hope offers a roadmap for slashing carbon emissions in the Southeast Asian city-state.

Roads, parking and utilities are being pushed beneath the town center. “We’re going for the ideal concept of segregation of traffic, (with) everything underground and then the ground level totally freed up for pedestrians.



Although comparatively small, with a population of under 6 million people, Singapore's per-capita emissions are higher than those of the UK, China and neighboring Malaysia.

That's due, in part, to air conditioning, which accounts for more than a third of typical household energy consumption. Global warming will only exacerbate this dependence. The Meteorological Service Singapore (MSS) has predicted that, by the end of this century, average daily temperatures in the city-state may be at least 34.1 degrees Celsius (93.4 degrees Fahrenheit) "almost every day" during the eight warmest months of the year.

*Centralized Cooling* Cold water, chilled using solar power, will be piped though the district's homes, meaning residents don't need to install inefficient outdoor AC condensers (though they can still control the temperature in their own apartments). This will generate carbon dioxide savings equivalent to taking 4,500 cars off the roads each year.

Planners used computer modeling to simulate wind flow and heat gain across the town, helping to reduce the so-called urban heat island effect.

*Pneumatic Garbage Collection* Instead of using a truck to collect garbage from every block, all the garbage will be sucked through a pneumatic system to a chamber that serves several blocks.

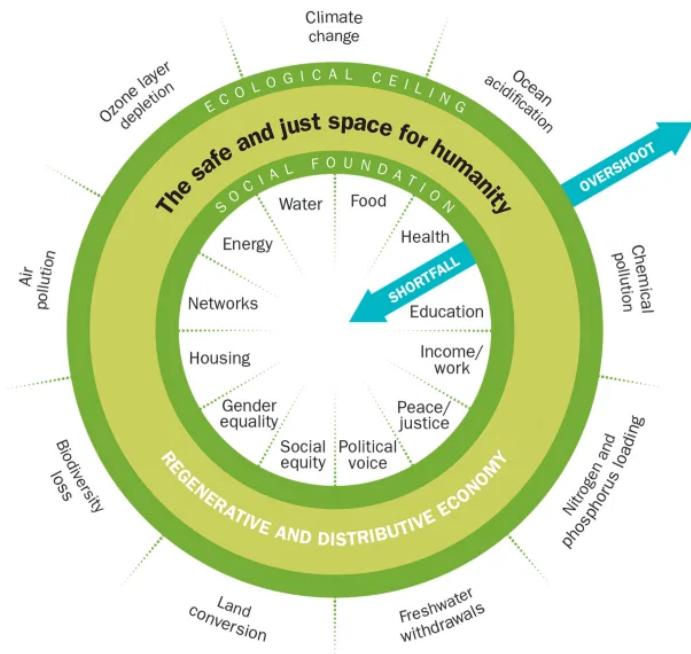
Singapore building 'eco smart' city (CNN)

## C.2 210125 Doughnut Amsterdam

Amsterdam Is Embracing a Radical New Economic Theory to Help Save the Environment. Could It Also Replace Capitalism?

20th century economic thinking is not equipped to deal with the 21st century reality

It's the first time a major city has attempted to put doughnut theory into action on a local level, but Amsterdam is not alone. Raworth says DEAL has received an avalanche of requests from municipal leaders and others seeking to build more resilient societies in the aftermath of COVID-19. Copenhagen's city council majority decided to follow Amsterdam's example in June, as did the Brussels region and the small city of Dunedin, New Zealand, in September, and Nanaimo, British Columbia, in December. In the U.S., Portland, Ore., is preparing to roll out its own version of the doughnut, and Austin may be close behind. The theory has won Raworth some high-profile fans; in November, Pope Francis endorsed her "fresh thinking," while celebrated British naturalist Sir David Attenborough dedicated a chapter to the doughnut in his latest book, *A Life on Our Planet*, calling it "our species' compass for the journey" to a sustainable future.



The goal of getting "into the doughnut" should replace governments' and economists' pursuit of never-ending GDP growth. The primacy of GDP overinflated when we now have many other data sets to measure economic and social well-being. Something that tries to grow endlessly we recognize as *cancer*.

In 2019, C40, a network of 97 cities focused on climate action, asked Ra-

worth to create reports on three of its members—Amsterdam, Philadelphia and Portland—showing how far they were from living inside the doughnut.

For low- and middle-income countries to climb above the doughnut's social foundation, "significant GDP growth is very much needed." But that economic growth needs to be viewed as a means to reach social goals within ecological limits

Citizen-led groups focused on the doughnut that are forming in places including São Paulo, Berlin, Kuala Lumpur and California bring the potential to transform their own areas from the bottom up. "It's powerful when you have peers inspiring peers to act.

Doughnut Amsterdam TimeMagazin

### C.3 210125 Attention-seeking Architecture

Weird and wonderful buildings are springing up in China and elsewhere, driven by cities' desire to make a mark in a world full of eye-popping imagery. Certain characteristics are shared, such as eye-popping imagery and curving architectural forms that stand out by virtue of being the last shapes you would come up with if you were only concerned with the practicalities of manufacture, assembly and engineering. There is the unsubtle wielding of natural and cultural symbolism – lotus flowers, the Himalayas, silk, shanshui. There is a passion for putting trees in the air, with a correlative unconcern about whether a storeys-high planter offers a comparable experience of nature to a park on the ground. Look and shape are everything.



UrbanClick-Bait: The Sunac Guangzhou Grand Theatre - 'Birthplace of the

Silk Road on Sea'

The underlying factors are partly those that have always driven attention-seeking architecture, the desire of businesses and municipalities to advertise and sell themselves, the urge to make a mark, to glorify, to self-aggrandise. They are magnified by such things as (in the Arabian Gulf) the vast quantities of money available and (in China) the colossal scale at which urban developments are rolled out – the not-small Sunac Guangzhou Grand theatre turns out to be a maraschino cherry in the vast cocktail jug of theme parks, indoor ski slopes, water rides and the like that is the Sunac Wanda cultural tourism city.

They are magnified again by technology, by the software that enables architects to visualise complex shapes and engineers to calculate them, by the photorealistic visualisation techniques that make a project seem physical before it is, by the construction techniques that turn these shapes into reality and, finally, by the internet's crowded global marketplace of imagery.

Guardian: Urban Click-Bait



# Bibliography