



The future of the future city

Michael Keith (University of Oxford)

**Urban Big Data Centre, Glasgow
May 2017**



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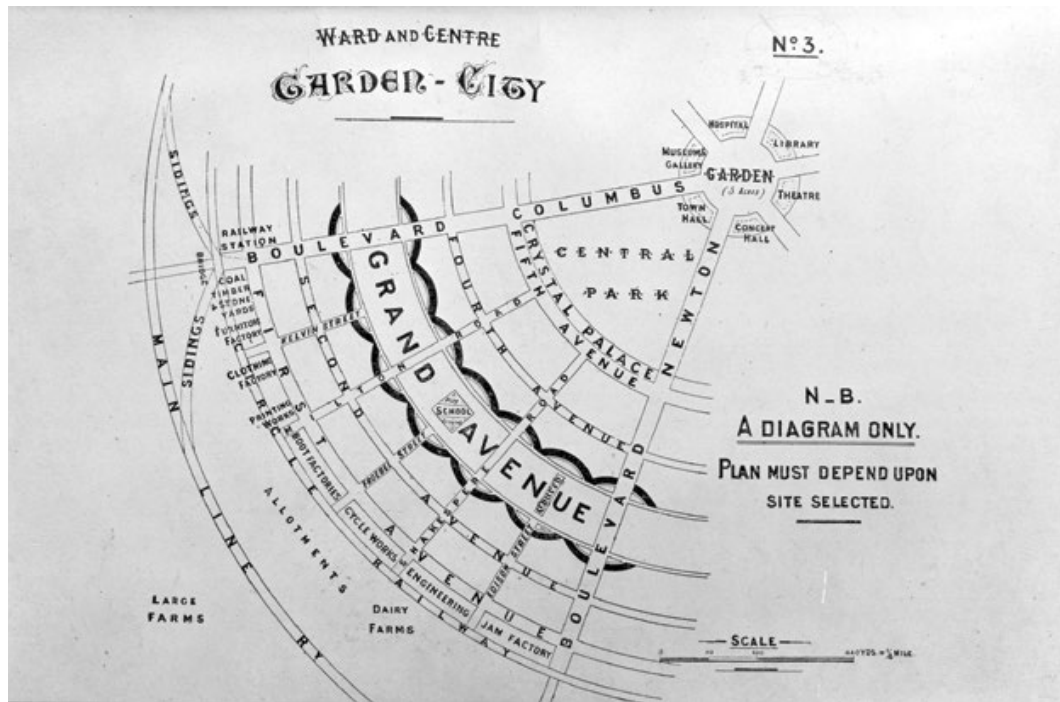
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The future of the future city

1. The future of the future city
2. The city system of systems
3. The turn to the city as laboratory of the future
4. Epistemologies of the city as laboratory
5. Platforms and interfaces: methodologies of experimental urbanism
6. Thinking about the interdisciplinary



*Images from Dunn,
N. et al, 2014 A
visual history of the
future*

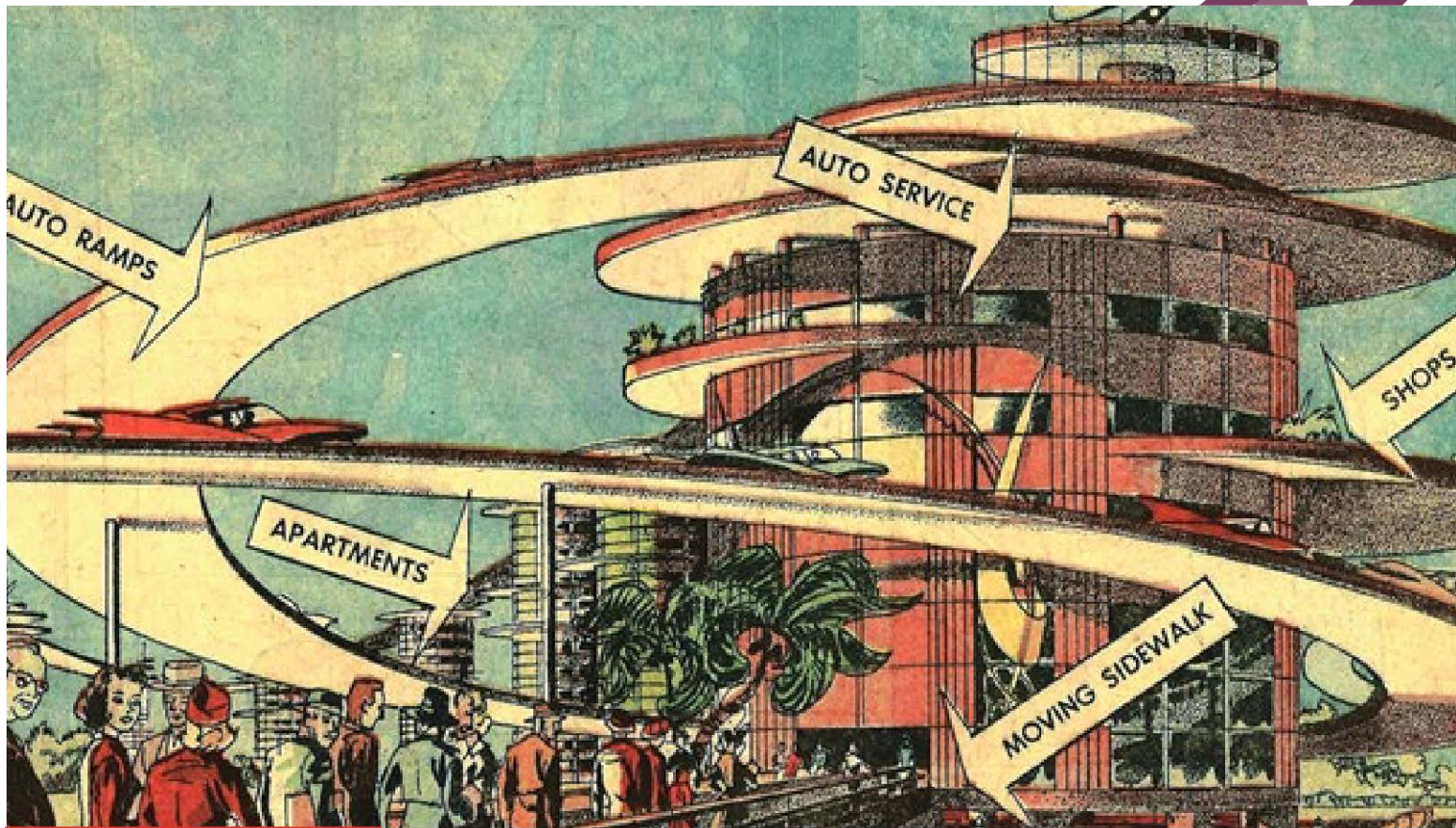


GARDEN CITY

Ebenezer Howard, 1902



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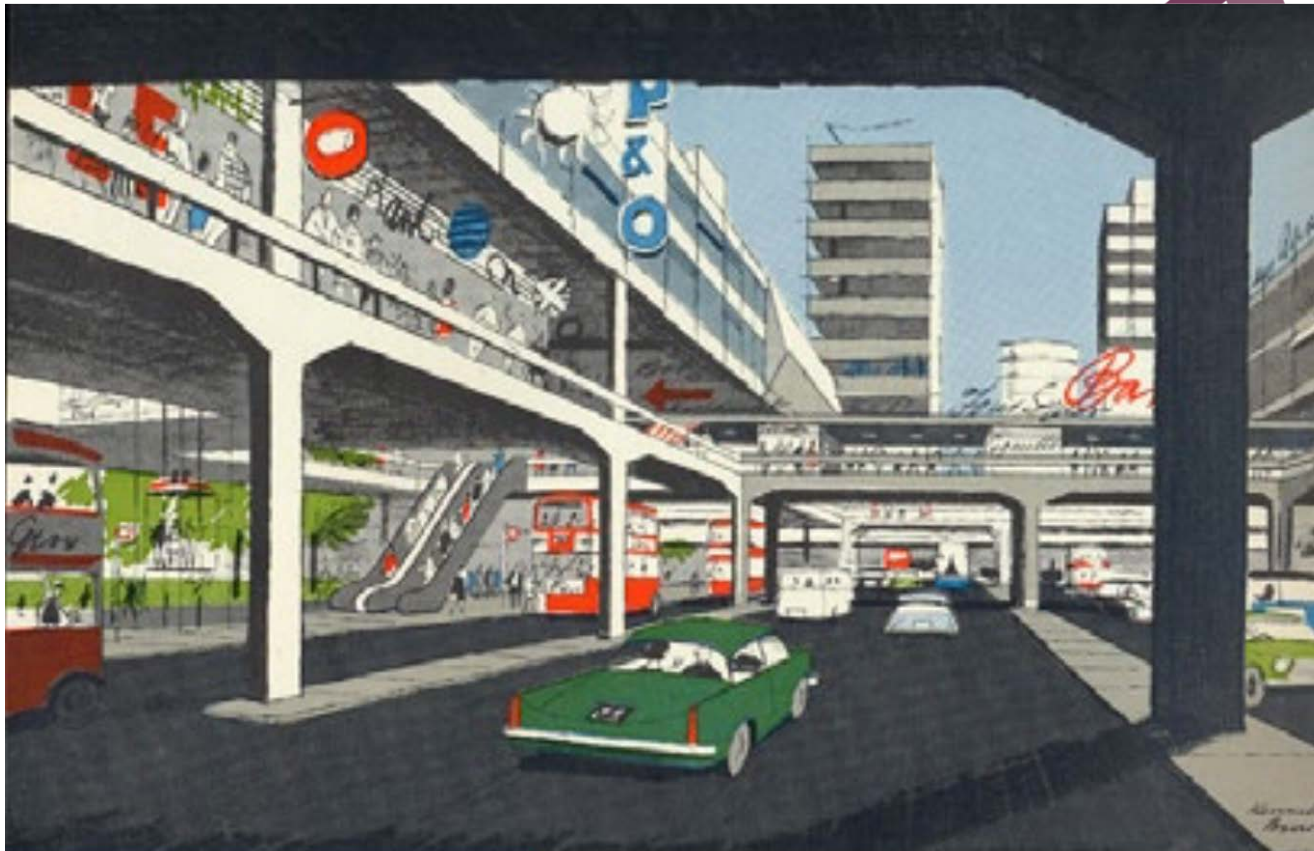


DIVIDED CITY

*Geoffrey Jellicoe, Motopia: a study in the evolution of urban landscape, 1961 in
Nick Dunn, 2014*



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MOVING CITY

*Colin Buchanan, Illustration from 'Traffic in Towns'; Ministry of Transport 1963,
in Nick Dunn, 2014*



*Albert Speer;
Planning for the
World Capital
Germania; 1939 –
image from Nick
Dunn et al 2014*

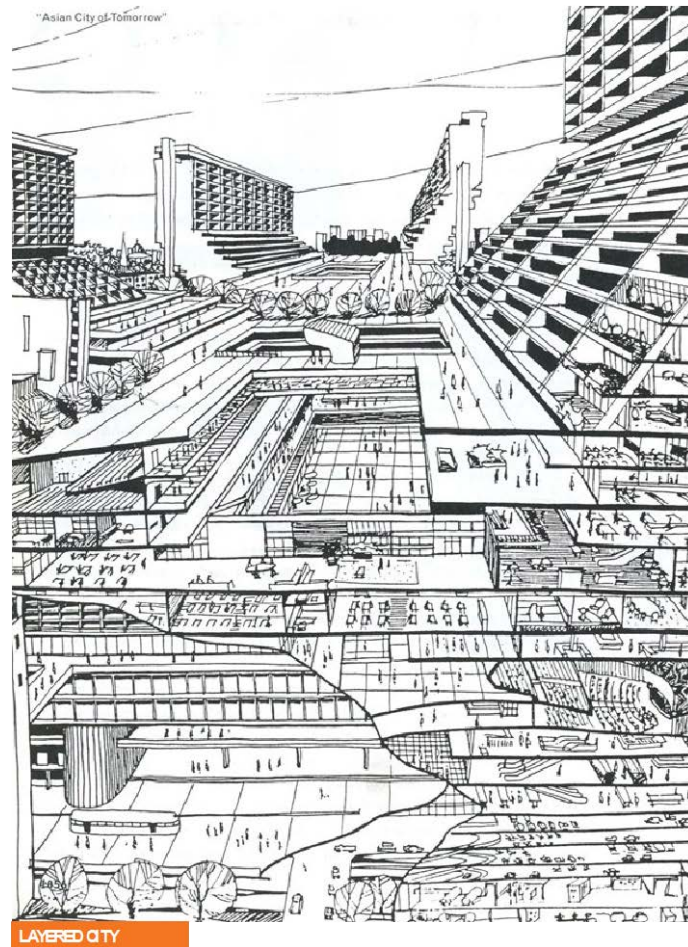


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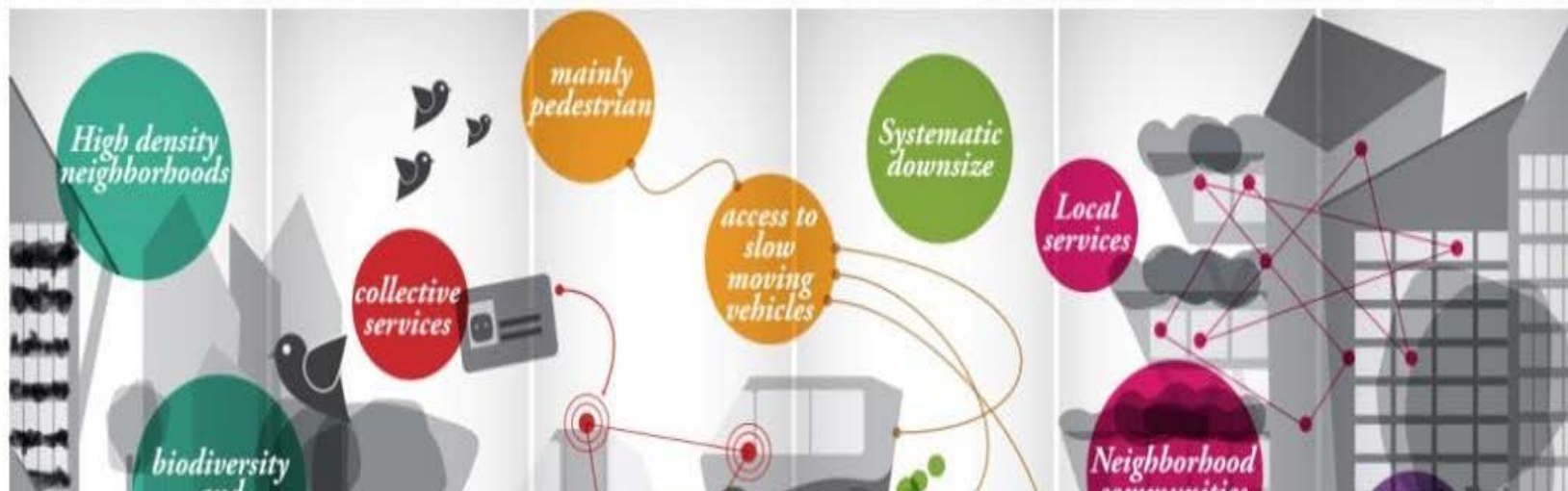
***Rem Koolhaas' Asian
City of Tomorrow, SMXL,
1995; from Dunn (2014)***



DIGITAL CITY

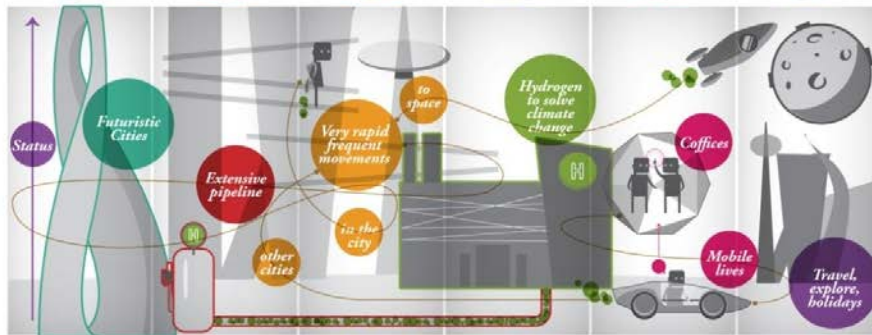


LIVEABLE CITY

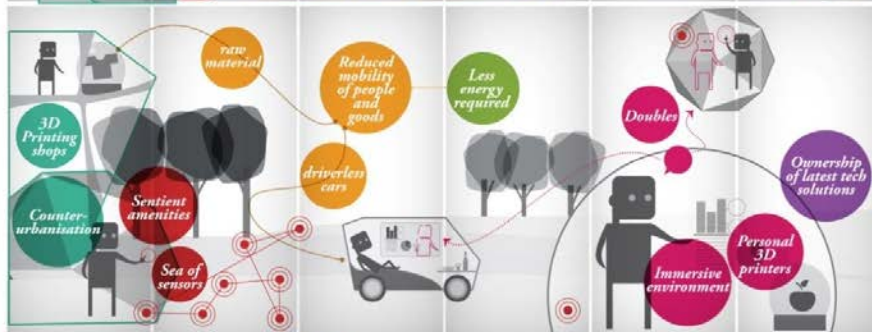


Source: Urry et al 2014

HIGH-TECH
CITY



DIGITAL
CITY



LIVEABLE
CITY



FORTRESS
CITY



Future city scenarios

Source: Urry et al 2014

Four core connected arguments

1. An argument about path dependency and city learning and the value of historical and geographical specificity
2. An argument about science and commensuration – theorising commensuration
3. An argument about experiments and knowledge – and about the power of Garfinkeling and ethnography
4. An argument about the normative – and the space of ethical judgement

2. The city system of systems



Social Innovation and digital technology



Batty (2014) Urban informatics and three related but distinct key ideas.

1. ***The 'smart city'***, the idea that cities can become more efficient, hence smarter, through the use of computers and computation across wide spatial and temporal domains - integrating operations disseminating the information associated with these activities to users through a variety of computable devices from regular PCs to smart phones.
2. These systems through their embedding into the built environment and their routine use by populations through hand-held devices ranging from cards to phones, are delivering large quantities of data about the way cities function. Data streamed and archived in real time – a new spatio-temporal record of all that goes on in the functions that are being automated. currently referred to as ***'big data'***.
3. ***The science of cities*** and the theorisation of advanced spatial analysis

Source: Batty 2014



Open and closed; cities as open systems (Sennett, 2013)

1. Parts in the system which interact have a distinctive character; you cannot simply substitute one element for another. Then, simple rules can generate complex results, which is the phenomenon called "**emergence**."
2. Known and determinate beginnings can wind up producing unforeseen or unpredictable results, which is the special meaning of "chaos" in a complex system.
3. In a complex system a relatively small-scale event can trigger a massive change in the whole system; this trigger is what we call in everyday language a "tipping point", famously embodied in the flapping wings of a butterfly
4. And finally, surprisingly, complex systems can self-organize, analyzing emerging conditions, responding to tipping points, adapting to "chaos"; such self-organization is called "auto-poiesis."



Ontology and complexity: Cities as socio-material systems and the agency of things



John Urry (2016) socio technical systems and

1. The multiplicities of time
2. The temporalities of path dependence, lock ins, feedback, tipping point, phase transitions
3. “Systems are neither social nor material but socio-material”(2016,72)
4. Multiple networks stretched through space and time
5. Wicked problems



The agency of integrating infrastructure



Metrocable J Line, Medellín

In Davila, J. 2013



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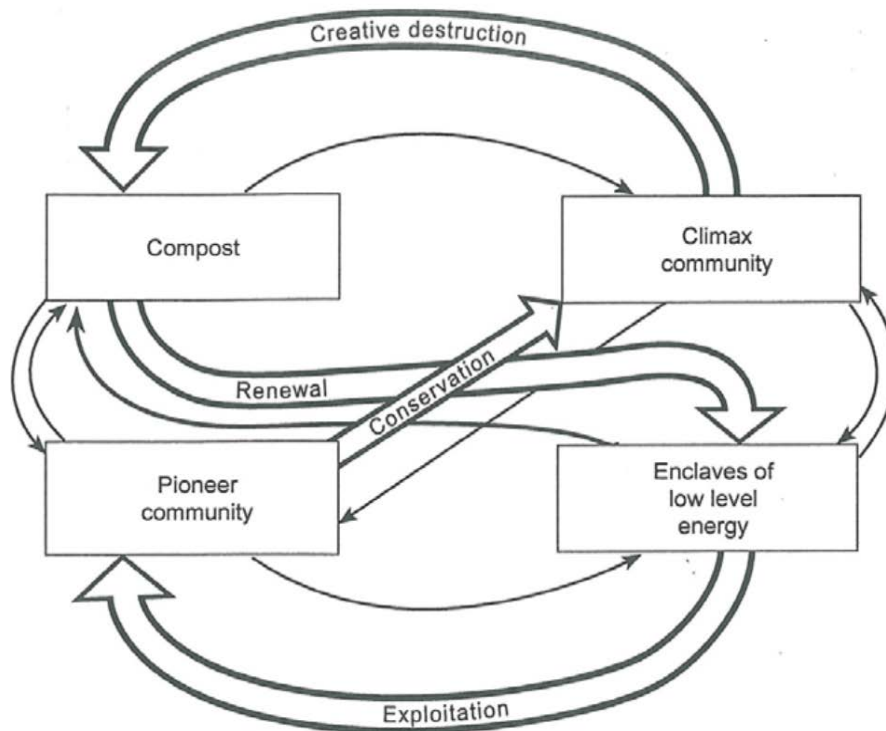
Wicked problems, clumsy solutions

- Material positions and moral positions: post war London redevelopment
- Systems theory, disequilibria, plural rationality,
- Moral positions on nature and hierarchy, markets, fatalism,
- Clumsy solutions over elegant solutions
- Four fundamental arrangements for the promotion of social transactions (markets, hierarchy, egalitarian, fatalism)
- Arrangements map onto the four kinds of goods
 - *private* (individualism),
 - *public* (hierarchy),
 - *common-pool* (egalitarian) and
 - *club* (fatalism)
- Clumsy solutions over elegant solutions

Source: Thompson and Beck,
2014



Systems theory, disequilibria, ecological sustainability, and the complexity of moral positions



1. Consequences of path dependency,
2. Lock in (preventing optimal low carbon technologies) – histories of sewage and waste
3. Urban geographical specificity of lock ins and the flexible city (Medellin cable cars and Kathmandu Milkway)
4. Sunk costs
5. Conventional systems theory - markets and hierarchies

*Source: Holling's (1986)
engineering model redrawn
by Thompson and Beck, 2014*

不到北京不知道自己官小

bu dao Beijing, bu zhidao ziji guan xiao

If you don't go to Beijing, you don't know how low your official position is

不到上海不知道啥叫乡巴佬

bu dao Shanghai, bu zhidao sha jiao xiangbalao

If you don't go to Shanghai, you don't know what a bumpkin is

不到天津不知道啥叫社会主义好

bu dao Tianjin, bu zhidao sha jiao shehuizhuyi hao

If you don't go to Tianjin, you don't know what the good of socialism is

不到深圳不知道自己钱少

bu dao Shenzhen, bu zhidao ziji qian shao

If you don't go to Shenzhen, you don't know how little money you have

不到重庆不知道自己结婚早

bu dao Chongqing, bu zhidao ziji jiehun zao

If you don't go to Chongqing, you don't know you married too early

***Urban Transformation and reform in urban China:
'crossing the river by feeling the stones'***




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Emergence: Francois Jullien's Propensity of Things (1995) and Aristotle's statue

shi 勢





“Par exemple, la rationalité européenne, dont nous nous glorifions tant, est fondée sur l’idée de «causalité»: un effet est dû à une cause. La Chine, elle, pense en termes de «propension»: un objet donné aura tendance à évoluer d’une façon donnée. Causalité ou propension: voilà l’écart, en apparence bénin, mais en réalité très profond, où se joue la différence entre deux visions du monde.”

Aeschimann, E. 2015 ‘Comment dit-on "liberté" à Pékin? Les 7 notions-clés de la pensée chinoise’ Paris: Bibliobs



PEAK practice? From *combination* to *commensuration* and *justification* (Keith, O'Clery, Parnell, Revi, 2016)

PEAK

Prediction and projection in the city

Emergence, combination, material cities and complex systems

Adopting innovation and metropolitan commensuration

Knowledge exchange and urban (co)production

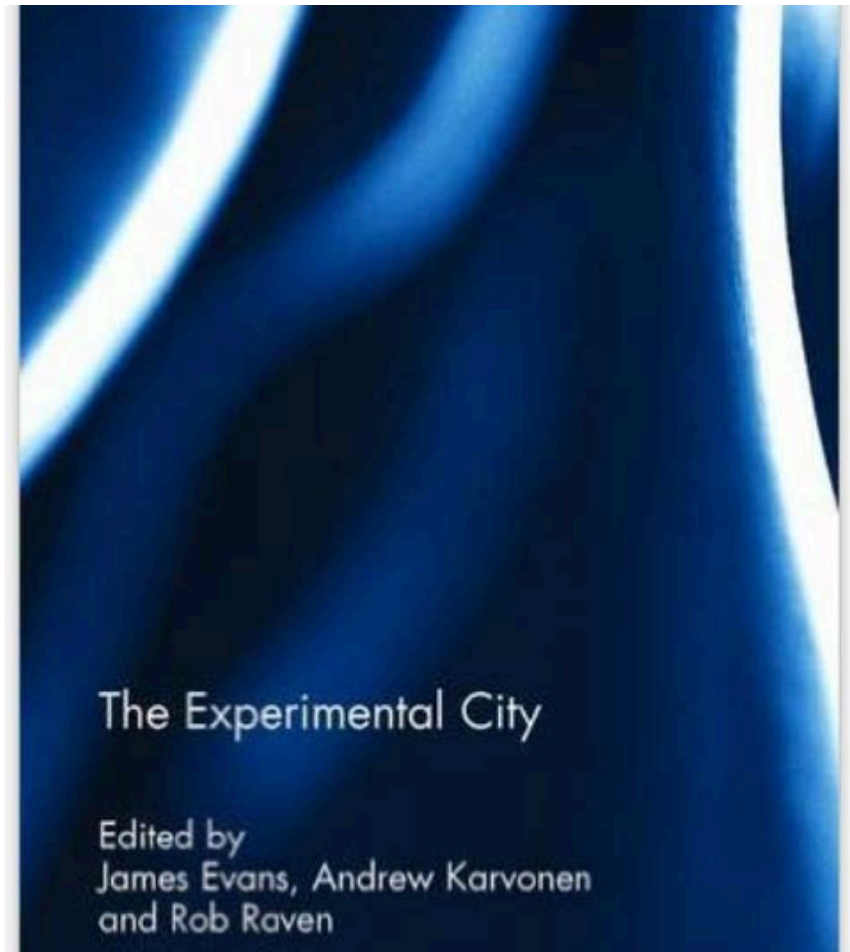
Commensuration: and Amartya Sen

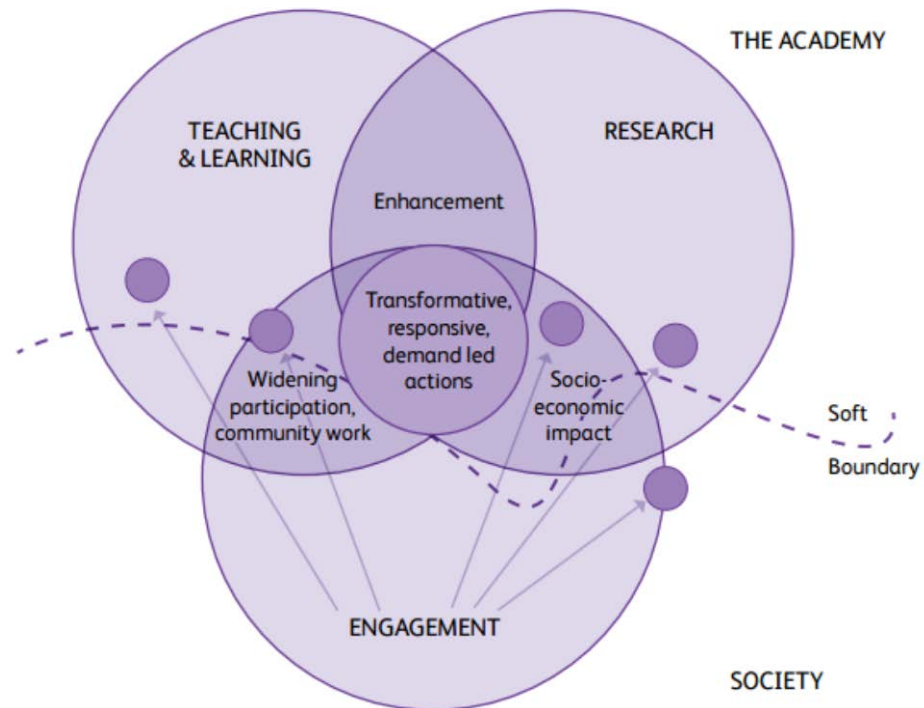
Justification: Boltanski and Thevenot, David Stark



3. The turn to the city as a laboratory of the future

- The city as a crucible of experimentation (Evans et al, 2016)
- The social production of urbanism's claims to truth and relevance
- Innovation and the research ecosystem





Goddard, J. et al 'The civic university' model





The Urban Lens: Research Ecosystem, Innovation and Interdisciplinary Research

The Urban Living Global Challenge:
A Prospectus

Report 1

Michael Keith and
Nicola Headlam



Comparative International Urban and Living Labs

The Urban Living Global Challenge:
A Prospectus

Report 2

Michael Keith and
Nicola Headlam

Emergent university research/policy entities



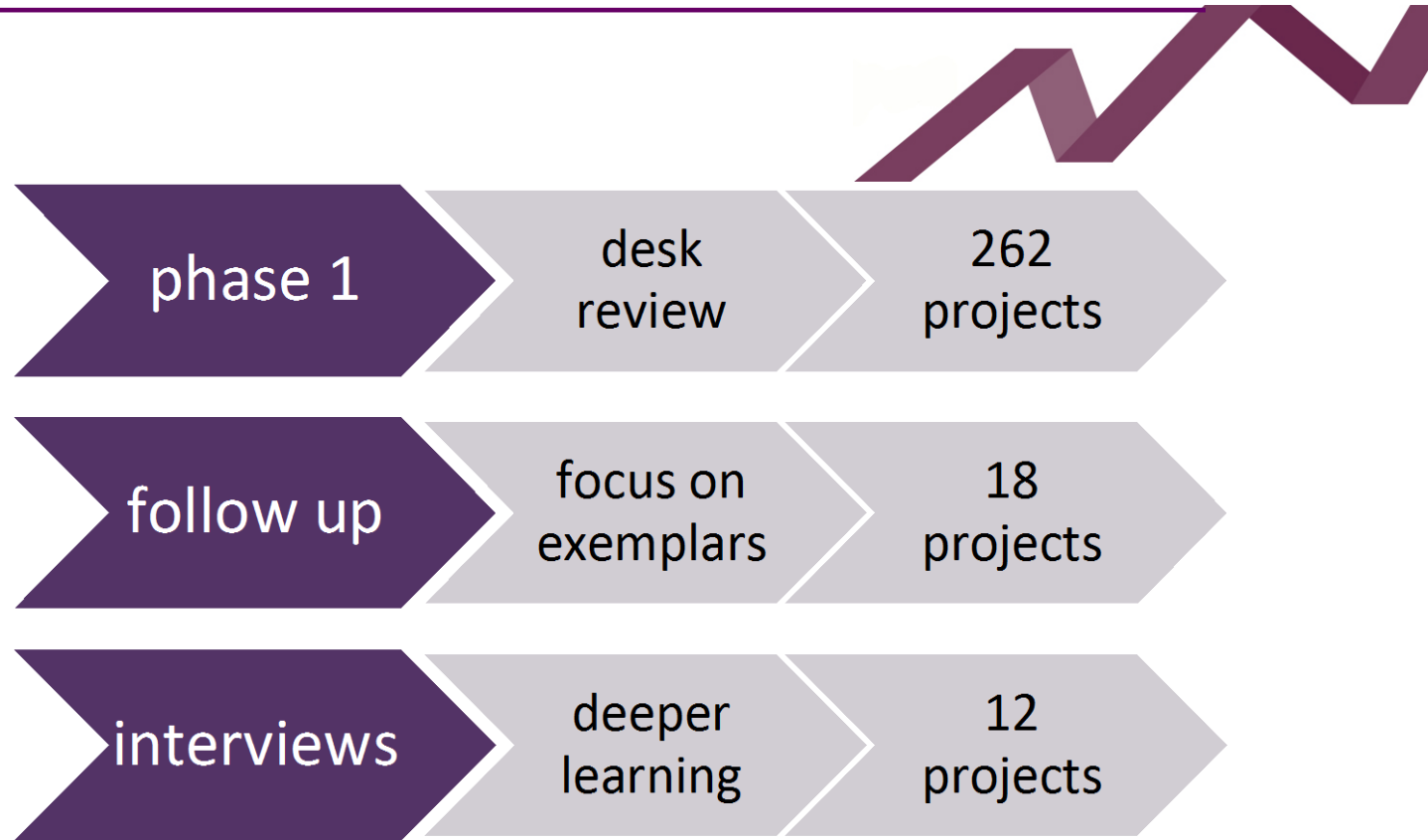
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Urban Living Pilots

- Urban living pilots
Best embedded in
civic university models
- Newcastle city futures
 - City redi at birmingham



Surveying Urban and Living Labs Globally



Headlam, N. and Keith, M. 2016
**Comparative International
Exemplar Urban and Living Labs**

'Innovation' meets 'research'

LEARNING FROM LIVING LAB EXEMPLARS

STRATEGIC FUNDING MODEL

Mistra Urban Futures

Fraunhofers

CIVIC EMBEDDED AGENCY

Boston Mayors Office of New Urban Mechanics

Newcastle City Futures

Policy Scotland

FOUNDATION LAB

Guggenheim BMW lab

Rockefeller Urban Innovations

ACADEMIC-LED/ACTIVIST-ENGAGED

UCL urban lab

Just space

UK PROJECT FOCUSING ON LAB ACTIVITIES

GUST



GUST Governance of Urban Sustainability Transitions

A project funded by JPI Urban Europe bringing together leading European research partners and practitioners to investigate and advance urban living labs.

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Snap shots

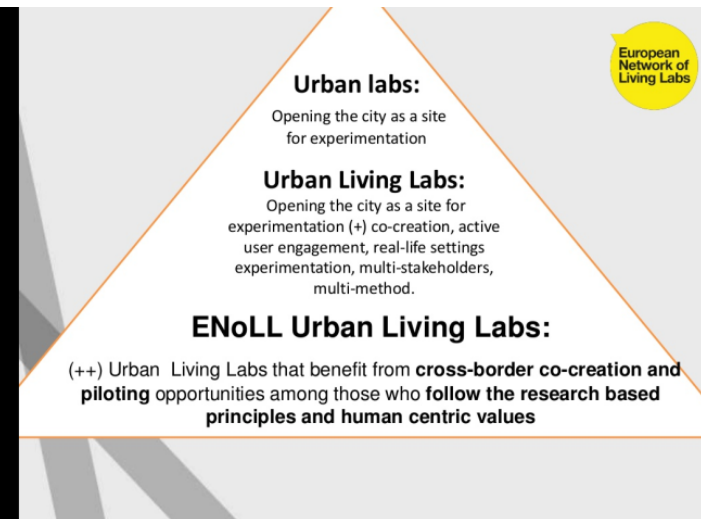
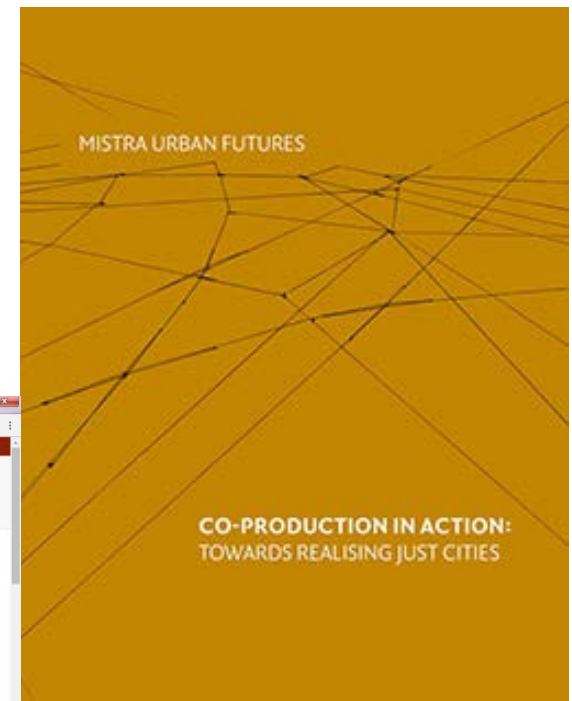
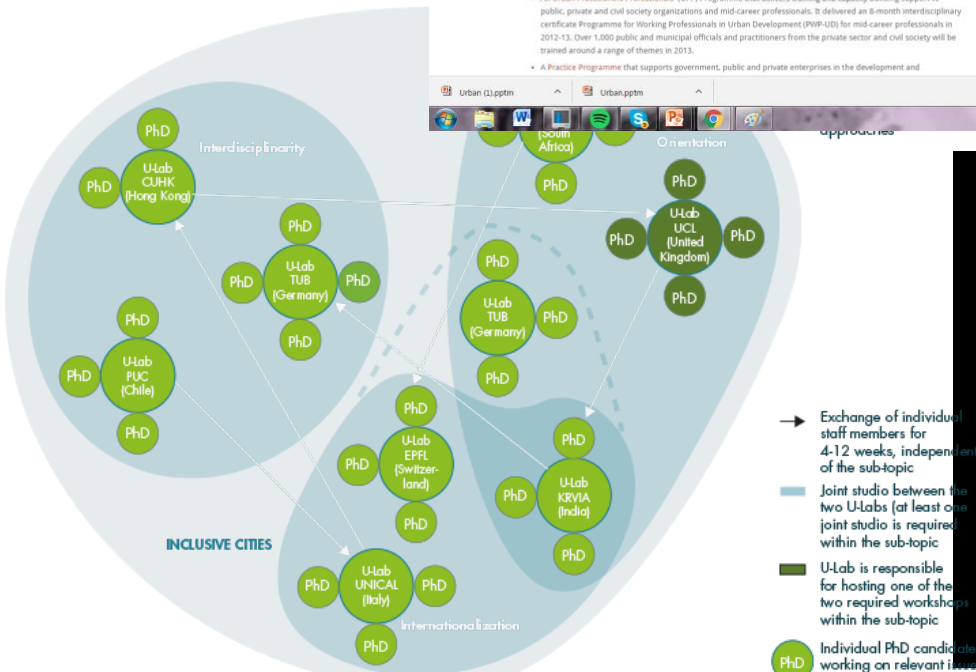
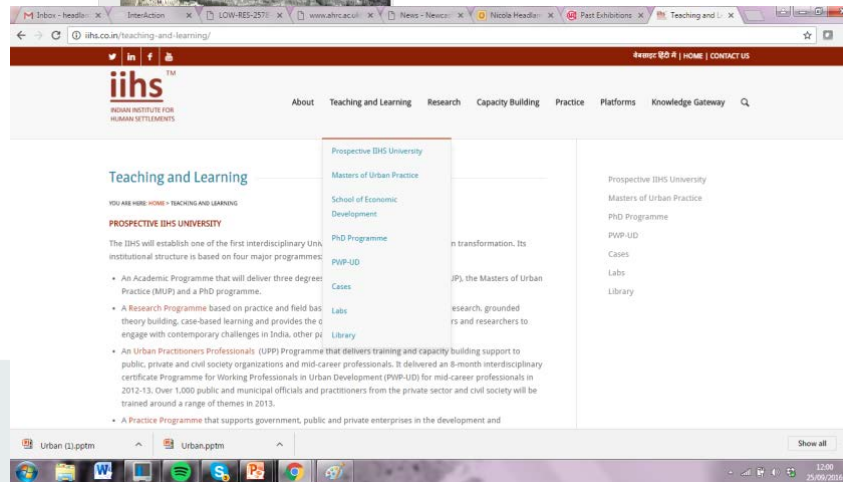
Here are snap shots of urban living labs in Europe, focusing mainly on the GUST partner countries of Sweden, the Netherlands, Austria and the UK.

Sweden

[Stockholm - New Light on Alby Hill](#)

[Borås - Norrby Innovation Platform](#)

GUST IN 2 MINUTES



4. The epistemologies of institutional diversity: international lesson learning

Amin and Thrift (2016) Seeing Like a City

- “the agency of another kind of urban assemblage – the effects of things massed together that furnish the world through closely juxtaposed or interwoven concentrations of humans, technologies and infrastructures providing much of the push. It is the coming together of overlapping sociotechnical systems that give cities their world making power.” (Amin and Thrift, 2016, 2)
- “the understudied republic that is the infrastructure of the modern city can become the main focus of political action” (Amin and Thrift, 2016, 6)

BUT.....

1. Variations of municipal logics: contractual logic (and Bloomberg’s New York) v trust based logics and Scandinavian labs (Copenhagen and Helsinki)
2. The social production of knowledge, standards, markets and intellectual property: open data, manipulation and monetizing data
3. Solutions v trade offs and the role of scenario thinking
4. The logics of commensuration and plural rationalities: studies of value and worth and the sociology of quantification (Desrosieres, Didier, Poovey. Boltanski and Thevenot, Stark)



Mary Poovey's 'alternative facts'

- The initial question “How can one use the numerical information that already exists?” is transformed to “What kind of epistemological instrument can produce numerical information that will make what is otherwise invisible appear?” (Poovey, 1998, 243)



5. Platforms and interfaces: methodologies of laboratory urbanism

Conceptual logics of:

- Data analytics and urban logics
- Garfinkeling and the experiment: gaming and broadcasting
- Memory and forgetting and path dependency: curating the future
- Choices and trade offs: in whose image will the city be remade: communications
- Clumsiness and participation
- The implications of the temporal
- The temporalities of the digital and publication

Dynamics of (inter alia):

- Curating
- Broadcasting
- Publication
- Participation
- Gaming



Intelligent cities then, have

1. Cities as primary partners
2. Institutions neither inside nor outside the academy
3. City hall and intelligent cities: flexibility, city futures, international learning
4. The economic drivers for cities clearly defined
 - a) 'Smart commissioning': invest to save principles and budgets; 'states as markets'
 - b) Disruptive innovation
 - c) Experimentation and innovation
5. Global learning, national delivery, locally embedded

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6. Thinking about the interdisciplinary

1. Clumsy solutions (Beck and Thompson)

The opposites of four precepts of policy analysis –

- (a) insist on a single agreed definition of the problem,
- (b) clearly distinguish between facts and values,
- (c) set up a “single metric” (pounds, lives saved, etc.) so as to be able to compare and evaluate options, and
- (d) optimise around the best option – together ensure the silencing of all but one actor.

2. Scholarship that is **normative and analytic; agonistic and disputatious**; institutionally contested,

3. *Kaleidoscopic urbanism* over *technocratic determinism*



For an urban studies

- Informed by diverse forms of science
- Valorises the historical and the ethnographic through a rigorous understanding of the
- Demands an engagement with the epistemologies of the natural sciences, the social sciences and the humanities and demands a serious engagement with their commensuration and their moments of incommensurability
- Recognises the geographies of path dependency and the histories of technological lock ins in shaping urban form
- Deploys the same analytical gaze to the forms of urban emergence in the cities of the global south as in the global north



Interdisciplinary challenges for urban studies

- How do we take mathematical notions of emergence seriously as the basis for interdisciplinary dialogue?
- What does it mean for urban studies to think about cultural traffic that flows around the globe ‘uphill’ and ‘downhill’, south-north as much as north-south?
- How might we focus on the scholarship of *commensuration* and *justification* in the mobilisation of scientific knowledges in the name of the public good?
- What are the optimal institutional forms of university scholarship that facilitate genuine exchange across humanities, social sciences and natural science?
- How do we see like a city but also still (and always) ‘in whose image will the city be (re)made?’



