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Urban Futures - Squaring Circles:
Europe, China and the World in 2050

[Logos and icons]
URBAN 2050
FUTURES
SQUARING CIRCLES
EUROPE • CHINA • WORLD

10-11 October 2014
Lisbon, Portugal

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EDITORIAL:
URBAN FUTURES-SQUARE CIRCLES

Olivia Bina, Luis Balula, Andrea Ricci
Portugal, Italy

“It is time to fill the gap...to take a position on how we want to live in the future. It is time for a visionary city”
Maas et al. (2009)

Futures studies: “a discipline that aims to discover or invent, examine and evaluate, and propose possible, probable and preferable futures”
Ratcliffe and Krawczyk (2011)

“it is all too easy to envision a dismal future of impoverished people, cultures and nature”

“Urban by Nature: we have to develop a new vision of the human habitat, now that it has become so urban: a vision of what this new city actually is and how it relates to nature and to our own nature... has the city not become our natural state, our habitat and our ecology all rolled up in one?”
International Architecture Biennial Rotterdam
Dirk Sijmons (IABR 2014)

“Even if information, models, and implementation could be perfect in every way, how far can they guide us, if we know what direction we want to move away from but not what direction we want to go toward?”
Donnella Meadows (1994)

Many argue that we are living in the ‘urban age’ and one could postulate an ‘urban species’ whose natural ecology is the city. According to UN data, an estimated 59% of the world’s population will be living in urban areas by 2030 (i.e. we create a city the size of Vancouver, every week) (UN Habitat 2011).

Many of the significant environmental, social and economic problems of this century, appear to concentrate around the densely populated, rapidly changing, fertile parts of our planet (Brenner and Schmid 2014; Koolhaas in de zeen 2013). Cities currently consume around 65 per cent of all energy and emit 70 per cent of all CO2, while occupying only 2 percent of world’s land cover. If densely populated ‘urban’ areas of the world are placing the greatest pressure on our planet, and are the drivers of the greatest human influence on nature (Schellnhuber 2009; Steffen et al. 2011) - then rethinking the ‘urban’ and what might be the relationship between the ‘urban dweller’ of mid-21st century and her urban environment, ought to be a priority (de zeen 2013; IABR 2014; UN Habitat 2011).

Urban foresight, visions and scenario building
Foresight is ‘a kind of structured thinking which makes it possible to predict the future, manage it, and (often) create it’ (Rogut and Piasecki, 2011). Foresight and futures studies’ techniques consist in the development of scenarios and visions for the future, and may be used for scenario planning. City foresight is important because cities are key to 21st century sustainability. Cities play and increasingly prominent role in global environmental issues, and are fundamental in enabling (or otherwise) a life of fulfilment (the traditional ‘good life’), and creating the conditions for ‘quality of life’.

Many cities realize the importance of envisioning alternative development directions for their futures, and see scenarios as a critical step towards sustainable, more liveable and enjoyable urban futures. According to theory and practice, reasons for engaging in urban futures studies and scenarios include:

(i) the growing complexity of urban systems and the resulting need to extend traditional planning horizons;
(ii) the intrinsic relationship between strategic planning and futures studies (both deal with long-term development visions); (iii) the social debate and stakeholder collaboration inherent to urban planning can be best achieved around holistic visions of the urban future (which scenarization can produce).

The growing complexity of urban systems requires new planning approaches, which traditional planning methods - usually short-term oriented and lacking an integrated approach - have been unable to deliver. In response to this complexity and the rising uncertainty and risks brought in by globalization and technological progress, futures studies, scenarios and strategic planning frameworks are seen by some as a sustainable alternative to traditional planning and increasingly used as creative and collaborative bases for decision-making.

**The UFSC2050 Conference Themes**

With the organisation of this first international conference on Urban Futures-Squaring Circles: Europe, China and the World in 2050, we look forward to explore advances in long-term thinking and foresight studies related to the urban question. This comprehensive theme allows for a wide range of topics and debates concerning the future of cities, and the challenges implied in their visioning and planning. We have designed the conference along two core themes and four thematic threads, which we hope will provide a fertile ground for a fruitful interdisciplinary and cross-sectoral debate.

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**The UFSC2050 Conference addresses two core themes and four thematic threads**

- Core Theme I · Scenarios for Cities of the Future
- Core Theme II · People and Societies in Future Cities
- Thematic thread A · Forward Thinking Methods
- Thematic thread B · Governance in Future Cities
- Thematic thread C · Future of Resources
- Thematic thread D · Future of Urban Systems

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I. **Scenarios for Cities of the Future**

China is said to have built the equivalent of the city of Rome every two months in the past decade, and current trends indicate that fast and massive urbanization will remain the country’s main driver of growth in the predictable future. While reports on Chinese ghost cities make headlines on the news every other week, making many fear a future housing bubble of global proportions, China is also at the forefront of eco-city trial planning, with the country turned into one vast laboratory for brand-new pilot “eco-towns” and “eco-cities” (two hundred at the last count), experimenting with the latest green technologies for infrastructure, building and transport. But in addition to these developments, the leadership has also been emphasizing the need to address the increasingly urgent human dimension of urbanization, in terms of social equality, environmental quality and economic opportunity for all sectors of society.

In Europe, the economic downturn of the last five years has caused a sharp slowdown in the pace of urbanization, and some cities have started to reinvest in their cores. However, fifty years of urban sprawl have produced “splintered cities” and over-extended suburban and periurban infrastructures, which are becoming increasingly complex and expensive to manage – and a source of environmental challenges such as pollution, congestion, and loss of fertile land. Contrasting with China, future change seems to be coming incrementally, through small-scale (and often bottom-up) initiatives, such as those promoted by Agenda 21.

II. **People and Societies in Future Cities**

The development of society is not predictable. Tomorrow’s society will be a result of individual and collective actions and the dynamics of their cumulative impact. On the one hand, society changes when people’s behaviour changes; on the other hand, social norms, as formed by institutions such as the state, the
market and the family, shape our values, choices and actions. The way future society shapes its institutions will have an impact both on social equality and on economic growth. As mentioned above, the Chinese leadership is now emphasizing the need to shift from ‘urbanization of the land’ (土地城市化) to ‘urbanization of the people’ (人的城市化), with a view to address the increasingly urgent dimensions of the impact of urbanization on people’s lives.

Demographic trends, both in Europe and China, indicate that we are heading towards an ageing society. One of the key questions for the future is what this trend will mean for the redistribution of resources among young people, working adults and senior citizens. Another is the persistent challenges of gender equality. In a rapidly evolving digital world, it also remains to be seen the ability of people to adapt and make good use of fast changing new technologies, and if the conditions and relations that allow individuals to control their own lives will still be met in the future. Ultimately, the concern—and the challenge—everywhere in the world, is to improve the urban experience, and the quality of urban life, of the people who will be living in future cities.

a. Forward Thinking Methods

The growing complexity of urban systems requires new tools for planning, and urban futures studies along with scenario planning have gained considerable importance in response to uncertainties and risks brought in by globalization, and to help understand the potential of technological progress. Increased uncertainty brings in higher risks of not being prepared for the future; thus forward-looking planning processes are crucial for sectors such as urban infrastructure networks (transport, energy, etc.) which are strongly path dependent and “stable” in the short- or medium-term.

City foresight and scenario-based planning are long-term approaches, particularly appropriate for informing policy and decision-making. Complete scenarios must consider a range of expectable (most likely), challenging (what could go wrong) and visionary (surprisingly successful) possibilities. They may be exploratory (answering to the question what can happen) or normative (answering to the question what should happen). Urban foresight and scenarios are exercises of imagination that imply collective thinking, stakeholder collaboration and social debate, which are all critical features inherent to strategic urban planning.

b. Governance in Future Cities

Virtual community networks are an important development for urban governance and are becoming a powerful political tool. Through them, a growing number of governments, civil society and market actors with different, sometimes conflicting agendas, ranging from local/sectoral issues to global challenges, are shaping the socio-political environment, questioning and changing traditional decision-making processes.

As a result of a general economic crisis and ongoing shortages in public finances (Europe), or a rapidly growing urban middle-class with new aspirations and demands (China and other rapidly developing nations), social tensions are deepening, and people begun challenging long-established government institutions and practices. What type of governance systems (centralized/decentralized; top-down/bottom-up; liberal/top-down) will evolve from these conditions as we approach 2050?

c. Future of Resources

Cities occupy just about 2% of the Earth’s land surface, but house half of the human population and use 75% of the world’s natural resources, discharging an equal amount of waste and generating huge ecological footprints. Humanity uses ecological services 1.5 times as quickly as Earth can renew them and “business as usual” scenarios show that pressure on resources – energy, materials, water and land – will
continue to rise, in order to meet the demand for goods, food, housing and transport of an ever increasing number of urban consumers.

Achieving urban sustainability will largely depend on the way we manage the complex and uncertain interactions between natural and human systems – between factors like economic development, greenhouse gas emissions, climate and ecosystems – today and in the future. The recent green economy paradigm, implying an economy and society with zero carbon emissions and a one-planet footprint, where all energy is derived from renewable resources, seems to provide many win-win propositions. But will green capitalism be enough to respond to the challenges? And will cities help in achieving these green promises sometime in the future?

d. Future of Urban Systems

Urban systems exist at many scales, from individual urban settlements to networks of towns and cities and their hinterlands – but they all depend on the movements and interactions of people, goods and services, ideas and capital through the network. Crucial to these interactions are the systems of transport and communication – and the integration of transport infrastructure with information and communication technologies is expected to become a key competitive factor for cities in the future. In addition to smart infrastructures, ubiquitous computing is expected to evolve and produce “intelligent environments” at city scale with advanced GPS and sensor technologies applied to the urban space.

At the same time that in Europe many cities are gradually implementing smart urban infrastructures on energy, transportation and building sectors, some radical and grand scale urban experiments applying the latest technologies in urban systems are taking place in such new-cities as Masdar, in Abu Dhabi or Tianjin, a Sino-Singaporean project near Beijing. While these large-scale “eco-friendly” experiments in urbanism might provide important lessons in sustainability for cities, some authors contend that they may prove unrealistic.

UFSC2050 Keynotes

As Donnella Meadows (1994) so lucidly remarked, exactly two decades ago, there is no amount of information, models, and tools that can guide our foresight and strategic planning, unless we achieve greater clarity (and agreement) about where we want to go, and how we want to live in the cities of near and far futures. This booklet is intended to offer an overview of the main messages delivered by keynote speakers during the two-day conference. It is our hope that it will make a contribution towards a much needed sense of direction for rapid urbanization, and more generally, for the rapid changes marking the 21st Century.

In “Crazy futures for cities, communities, and other human concatenations”, Wendy L. Schultz challenges our assumptions about what is ‘normal’, while warning that our roots in the past tend to create biases and distorted visions of the present, if left unexamined. If we value the idea of ‘future as possibility’, a future open to creative, provocative and transformational solutions, but also open to inevitable ‘black swans of change’ we need to keep asking ourselves: ‘How are my own assumptions constraining my creative thinking about cities?’ Therefore, she claims, it is critical to understand the images of the future we hold within us, the images of the future we aspire for, and the images of the futures we fear. We need to devise better methods and tools for ‘sharing and discussing all the images and ideas about the future a city’ residents have, in order to create a truly inclusive image of the future that invites creative action.

Departing from the idea that ‘every human has a vision of how he or she would prefer to live, work, and play’, Anton C. Nelessen, in “Visioning the Transformation of Cities”, places urban design at the centre of such inclusive image of the urban future, or, as he defines it, a ‘consensus vision’, the result of a ‘collective attitude towards place’, or yet ‘design by democ-
racy’. Designing cities that advance health, happiness, and prosperity requires involving people in the urban design process. Based on people’s visual understanding of the world, and using the Visual Preference Survey, a tool he developed, tested and improved over the last thirty years, Nelessen seeks to help build a consensus vision of what participants want for the future of their cities and regions and to use this visual understanding to formulate policies, plans and urban projects that enhance the quality of ‘place’ and improve people’s quality of life.

Based on the analysis of hundreds of cities realized by the Urban Metabolism Group at M.I.T., John E. Fernández in “Urban metabolism and sustainability transitions” develops a possible classification of cities based on resource consumption typologies. The ‘text of cities’ in terms of intensity of energy and materials consumption may give us important clues about the present conditions and future path of a given city and, as expressed by numerous examples, there is a noticeable segregation of types between cities of the developed north and cities of the developing global south. This is quite significant because, as Fernández argues, the sobering conclusion is that ‘the world should become less sustainable before it directs itself toward the difficult task of global sustainability’. Urban planners and designers, architects and high-tech enthusiasts must go beyond ‘sentimental versions of green’ and ‘embrace the numbers’ that show that we are heading for a highly complex urban future.

The concept of ‘human flourishing’, according to Aristotle ‘the satisfaction of those desires which will lead to and constitute successful human living’ is the leitmotif of Mee Kam Ng’s intervention “The right to human flourishing and the production of space: implications for the planning of future cities”. Envisioning space as ‘social morphology’, she draws a critique of the politics of space production of the Hong Kong’s growth machine. The city’s remarkable material progress has not been accompanied by higher standards of quality of life – and the human and social effects of an over-crowded compact city with minimal living quarters, lack of open space, and an extremely busy pace of life, are notoriously manifest on such indicators as mental illness and divorce rates. The planning and production of urban space must therefore refrain from a focus on the exchange value of urban space and start protecting individual rights to a good human life and allow the awakening to people’s right to human flourishing.

In “Exploring future prospects and paths for the sustainable urbanization of China” Li Shantong presents a series of scenarios for sustainable urbanization in China for the coming 20-30 years. This will be done along six axes – population, land, financing, industry, transport, and resources & environment – which are the key sectors involved in the urbanization process. The exercise is meant to illuminate the paths of reform and policy measures needed to achieve a sustainable scenario, despite the speed and scale of Chinese urbanization.

Fulong Wu discloses parts of his new book “Planning for growth: urban and regional planning in China”, to be published in 2015. Tracing the history of Chinese urban planning from the ancient fengshui art that studies the energies of places, through the Socialist era and the Cultural Revolution, to the most recent plans for new towns and eco-cities characteristic of Chinese new planning practices, he reminds us that China has a long-standing and varied culture of city planning. His focus, however, is on urban entrepreneurialism in the post-reform era, when new town planning became a large-scale place-making pursuit. Eco-cities, in this context, are in essence mega urban projects which try to materialize central government directives to curb pollution and limit carbon emissions. Planning, on the other hand, is seen as ‘a new method to deal with the problems created by urban entrepreneurialism and local expansionist plans’. Examples of the development of new towns in Beijing, Shanghai, Nanjing, Kunshan, and Shantou are provided.
In “Urban governance and financing in China 2050”, Zhi Liu contends that a number of distortions, imbedded in the Chinese growth model, have resulted in many urban economic, social and environmental problems, such as the over-exploitation of natural land and resources, inefficient urban land use, wasteful public investments, traffic congestion, air pollution, water contamination, and growing social tension. Likely scenarios for urban governance and financing in China by 2050 must be based on three key considerations: (1) the urban future will be influenced by previous decisions and events (urban development is path-dependent); (2) society will try to steer the course of urbanization towards a vision that is feasible and desirable; and (3) foreseeable factors, such as rising labor costs, ageing of population, shortage of fresh water, and climate change, are expected to prevail as the most significant challenges. The central government seems to be aware that a new system is required for ‘better efficiency, social cohesion, sustainability and resilience in urban development’ and it started recently a new round of structural reforms which will pave way for the achievement of a desirable vision of urban China by 2020. While economic and political reforms appear to be inevitable, the key question is if these reforms get implemented and how soon. As Zhi Liu concludes, we should not expect paradigm shifts; it is ‘highly likely that the political reforms will be advanced in a fashion of strategic incrementalism’.

The pressures and problems of megacities in Latin America are the central theme of Luiz Cesar de Queiroz Ribeiro’s keynote “Urban transition: hopes and challenges - with Brazilian and other Latin American References”. The predictable challenges of mega-urban regions, such as the São Paulo-Campinas-Belo Horizonte-Rio de Janeiro axis, with over 45 million inhabitants, are exacerbated by a compound of social problems - such as inequality and urban segregation, a housing deficit and lack of basic urban services, urban poverty, violence and crime – due to the fast emergence of an urban society, characterized by informality, under the successive crises of the 1980s and 1990s. There are, however, many signs of change and potentially positive scenarios for the future of Latin American cities. Important transitional trends are identifiable, such as the emergence of public policies regarding social protection and income transfer, or the advancement of urban reform programmes for shantytown urbanization and re-habilitation. Latin American cities today face three long-term critical challenges: (1) the challenge of new urban forms of governance (including metropolitan governance); (2) the challenge of quality urban welfare; and (3) the challenge of knowledge. Their future will depend on how these challenges are to be met.

‘The Homo sapiens urbanus is and will increasingly be the norm’ states Domenico Rossetti di Valdalbero in “Smart urban dynamics: a European perspective”. The facts seem to confirm the statement, as in the EU, currently 360 million people – or 72% of the population – live in cities and their peripheries, and by 2050 this figure is expected to rise to 80%. Cities have therefore a key role to play, but they must learn how to balance multiple and competing objectives. Cities are exposed to ‘resource scarcity and climate change’ and, as poverty, social inequality and racial tensions rise, some cities ‘risk becoming centers of criminality and disaffection’, while others ‘may become focal points for extremist ideologies and urban insurgency’. But, at the same time, cities are also ‘breeding grounds for knowledge creation, material flows, trade and transport’ and ‘transformative spaces fostering the emergence of new opportunities’. Cities will have a critical role on crafting new solutions for such aspect as waste and water management, mobility and housing improvements. A representative of the DG Research & Innovation of the European Commission, di Valdalbero concludes by referring to the initiatives for European cities promoted by Horizon 2020, and in particular to the Grand Societal Challenges dealing with energy, transport, environment, inclusiveness and security issues.
References


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There are no future facts
This is the first rule of futures thinking that I was taught. The second was, *tomorrow will be nothing like today*. Even quantitative forecasts must inevitably be taken with a grain of salt, as they are based on assumptions which are themselves based on mental models and values derived from past experiences and worldviews. Roots in the past create filters and biases in the present, if unexamined.
If there are no future facts, and if forecasts are problematic, on what is futures research based?

The image
The only facts we can collect in the present about the future are the *images of the future* held by everyone in this room, in each of our organisations, in each of our communities, cities, and nations. And each of us holds a myriad images of the future in our imaginations — old, new, steady-state, extrapolative, fearful, wishful, fantasy, surreal. To keep ourselves sane and make day-to-day life manageable, we tend to default to ‘tomorrow will be a lot like today.’ Given that as a working assumption, it is no wonder that black swans of change surge into flight and surprise us. Any image of difference, of a future in contrast to the present, critiques the present. It holds a mirror to our assumptions and challenges us to question them. This challenge opens up space for creativity: the future as possibility is the realm of emergence, of actions and adaptive responses generating novel outcomes.

What are the images for city futures we commonly extrapolate today?
Images based on extrapolation abound. Cities are, of course, massive constructs society accreted over time, and as such have the inertia, and the momentum, of that mass: architectural mass, infrastructural mass, regulatory mass, capital mass, and the sheer mass of people themselves. More importantly, many have the mass of history. The older the city, the more slowly its fabric can change, because that fabric is its beloved nature. The cities of Europe, for example, steward their past as a resource for the future by protecting
certain buildings and neighbourhoods. The cities of the USA have less past to steward, and the sight of 40-year-old buildings imploding to make way for the new is much more common. So, despite my comments above about tomorrow being little like today, for cities with deep historical foundations, the sheer momentum of tradition means that a changed tomorrow is likely to be a long-term future – unless assumptions are explicitly and deeply challenged.

Crisis provides such challenges. What crises might cities face in the future? What changes might trigger the end of the urban world as we know it? The table below offers a matrix of example change triggers and the possible outcomes for cities and societies. The table lists triggers of change against speed of possible onset. You will note that four of the triggers produce crisis outcomes – global warming or cooling; massive demographic shifts; and cultural and social instabilities. Discovery and innovation may also trigger the end of the world as we know it, but in potentially more positive and sustainable directions.

The various city futures that emerge may be briefly summarised as follows:

- Fire: the gradual global warming scenario of rising temperatures, slowly rising sea levels, declining availability of fresh water, and increasing ecological shifts. Arctic cities become temperate, temperate cities tropical, tropical cities unlivable.
- Flood: the rapid onset sea-level rise scenario that eradicates many coastal cities and re-creates others in the spirit of Venice (which would be lost); inland communities groan under the onset of millions of coastal urban environmental refugees fleeing to drier ground.
- Ice: a wild card / discontinuity future of global cooling where sudden catastrophic climate change is triggered by a super-volcano eruption (eg, Yellowstone) or a nuclear winter (perhaps as a result of terrorist use of black market nuclear weapons). Cities become huddles for warmth in a frozen wasteland; infrastructure becomes friable due to constant re-freezing.
- Fade: the slow erosion of the urban fabric, both of social interconnections and of the built environment,

<table>
<thead>
<tr>
<th>Origin</th>
<th>Global Warming</th>
<th>Global Cooling</th>
<th>Life / Demography</th>
<th>Culture / Society</th>
<th>Discovery / Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradual Changes</td>
<td>Desertification; slow sea-level-rise; aquifer intrusion; agricultural decline</td>
<td>End of interglacial, transition to glaciation</td>
<td>Slow decline in fertility worldwide followed by global population decline</td>
<td>Decreasing stability and security locally and globally as people compete for scarce resources</td>
<td>Accelerating change; nano-bio-info-cognino convergence; ability to manipulate “nature”/ourselves</td>
</tr>
<tr>
<td>Abrupt Changes</td>
<td>Increased sea melt, partial collapse of the West Antarctic Ice Shelf: sea level rises 1 metre</td>
<td>New “little ice age,” generated by, eg, increased volcanic dust and/or shifts in Gulf Stream</td>
<td>Famine: starvation; depressed immune systems; resistant infectious agents and zoogenesis</td>
<td>Mass civil unrest and border / regional conflicts; failed states explode</td>
<td>Singularity: radical innovation feedback blows away human / machine / natural boundaries</td>
</tr>
<tr>
<td>Wild Cards / Discontinuities</td>
<td>Asteroid strike super-heats Earth’s atmosphere</td>
<td>Super-volcano or Nuclear Winter</td>
<td>Global plague; population collapse</td>
<td>Warlord deploys bio-WMD against neighbour territory</td>
<td>Discovery of Grand Unifying Theory / “Theory of Everything”</td>
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as Western societies age and fewer workers are available to support urban economic engines – labour moves to centres of highest opportunity, leaving some urban areas to languish: neo-Detroit – metropolitan governments struggling to maintain basic infrastructure and services.

- **Plague**: the wild card scenario of urban collapse brought about by a runaway epidemic – perhaps even a common infection made unstoppable due to widespread antibiotic resistance. Cities become grids of quarantine zones.
- **Meltdown**: a slow social collapse, commencing as peak everything (power, water, food, jobs) drives increased economic and therefore social instabilities exacerbated by years of increasing inequities. Rising tensions between the wealth-protected historic neighbourhoods and ever-shabbier favelas.
- **Blow-up**: the rapid-onset tipping point version of Meltdown, as failed states everywhere explode, nations fracture, and cities become both points of conflict and arenas of negotiation for rapidly shifting power plays.
- **Sustain**: a paradigm shift away from the capitalist world-system and its consumerist worldview to one focussed on cradle-to-cradle recycling, zero carbon, and putting bioscience innovations to use in growing city infrastructure: the city as farm, forest, and fabbing centre.
- **Transform**: a paradigm shift putting all assumptions at play – the boundaries between humans, their technologies, and the environment, are porous. Humans, as humans, lose their monopoly on intelligence, while new forms of artificial life and artificial intelligence emerge. Lives are long, experience a currency, education continuous, production and governance open-source and blurred between the local and global, and children few. Cities are redesigned on the fly to suit needs and whims of their organic and silicon inhabitants.

Which of these do you find crazy? Any of them? Which do you find craziest – the most pessimistic – or the most optimistic? Do any of them challenge assumptions or paradigms of how the world works that you take for granted? This list is of course merely a general set of
examples. Applied future city design requires that we each think crazy about our own cities in detail.

**What craziness helps bust assumptions and generate novel ideas?**
In English, the term ‘crazy’ has two basic interpretations: 1) being flawed, unsound, or broken mentally; and 2) being unusual, and out of the ordinary. Judging behaviour as ‘crazy’ is subjectively relative. When I was a child, if I were walking down the street and the person coming towards me was talking to herself out loud, I would very likely cross the street to avoid her. Now we are all surrounded by crowds of people ‘talking to themselves’ – and no longer consider it ‘crazy’ because it is contextually appropriate in an era of mobile phone earpieces. It is neither unusual behaviour, nor out of the ordinary, given a specific technological setting. The same applies, of course, to different cultural settings: flooding a bathroom by using the shower hose outside of the stall is ‘crazy’ behaviour in the USA – but perfectly rational in Japan, where the bathing room has a drain in the floor, and one is expected to be clean *before* entering the bath.

So if we define ‘crazy’ by contrast with ‘normal’, then it is the unusual as contrasted against the usual. ‘Crazy’ is subjectively relative to internal expectations filtered and biased by milieu, culture, and technological setting, among other things. That is precisely its utility to futures thinking. ‘Crazy’ – and the sense of nervous apprehension it engenders in viewers – highlights and problematises the assumptions and points of view that compose the normal. If the various futures we might face are composed of surprises, of novelty – of the abnormal – then crazy is just what we need in the present: it exposes our blind spots, the dangerous limitations of our assumptions. So we need to develop a capacity for deliberate, and deliberative, crazy thinking about not just cities in general, but our own specific cities in particular.

**Images of the future:**
*a continuum of infinite possibilities*

**What tools can foresight contribute to helping us don a consciously crazy perspective when needed?**

**Participatory**
Useful craziness requires jarring ourselves loose from ordinary perspectives and business-as-usual thinking. An immediate aid to that is actively listening to alternative points of view. Participatory methods that engage culturally diverse groups of people are an excellent start.

A few of my favourite (see Notes, below, for URLs) are the Three Horizons framework; Causal Layered Analysis; futures wheels; assumptions reversal; and design card games such as the the Art Center College of Design’s Mobility Vision Integration Project deck, and Situation Lab’s “Thing from the Future.” Each of these creates situations that help participants inventory and audit their own assumptions and what they take for granted, and then challenge those assumptions, mental models, and worldviews in different ways.

- Three Horizons – inventory all the values, mental models, assumptions of the current state of play; identify as many emerging images of the future (eg, technological innovations, social transformations, political ideologies, economic systems); work to invent the bridging actions and changes that would support or catalyse the emerging futures.
• Causal Layered Analysis – explore a topic first by sharing its litany, how people express its immediate impact on day-to-day life, on their daily experience – the language of surface events and impacts. Then deepen discussion to the technical or systems layer, discussing issues in terms of their mechanisms, systems, driving forces, and causes. Then dig beneath the systems explanations to worldviews, the level of paradigms, assumptions, and value systems that filter and constrain perceptions and problem identification. Deep analysis of how truly surprising emergent change – eg, black swans – might affect the shadow economy requires considering how values and paradigms themselves might shift, generating new research questions and different systems that in turn create novel events and impacts in daily life. Finally, uncover the myths and metaphors that express the perspective of deep cultural structures relevant to the issue.

• Futures wheels – futures wheels begin with a trend or emerging issue of change, and then map concentric cascades of impacts – eg, how might solar cells embedded in roadways delivering power to the grid and charging electric cars inductively change the urban and national electric grid? What are the specific first-order impacts of that potential change? What are the secondary impacts – the changes driven by the first order impacts? What are the tertiary impacts? Working through the potential impacts generated by proliferating cascades of change can result in extreme, but logical, outcomes that challenge business-as-usual in very specific details.

• Assumptions reversal – this begins with an identification of everything we assume to be true about an industry, organisation, community, service, function, etc. Participants are then asked to state each of those assumptions as its polar logical opposite. For example, what do we assume about restaurants? They exist at a particular site; the chef creates the food from ingredients delivered by wholesale suppliers; they are for-profit businesses. What if a restaurant were mobile, nomadic, situated in a hot-air balloon, or a pop-up shop? What if the dishes were created by random combinations of ingredients plated by a 3D food printer and delivered by a robot? What if the chef cooked whatever raw ingredients the customers themselves provide, and the restaurant itself was a community meeting center?

• Design card games – another way to create crazy difference and unusual futures is to add a stochastic element to the design, or a creative forced tension by contrast. Two examples are the card games created by design schools:

  • Art Center College of Design’s mVIP design game offers an informational deck of emerging changes that allows you to deal a hand of cards describing, in the sum of its combined trends, a potential future; the accompanying design deck specifies the design goal, customer niche, and design constraints: participants then design a new artifact for the future context.

  • From Ontario College of Art and Design, Situation Labs’ “The Thing from the Future” card deck creates ‘hands’ with four types of cards: arc cards, describing possible futures; terrain cards, describing contexts or topics; mood cards, describing emotions that the object might evoke; and object cards, specifying the object to be designed. Details of the future are explored at the level of artifacts in use in daily life, creating a surprising range of new human activities and potential impacts.

Crowdsourced
Digital media enables massive participatory crazy work, and excellent on-line platforms and analytic engines are now available to assist crowdsourcing futures.

Examples of gaming crazy futures include Jane McGonigal’s SuperStruct futures role-play game (http://archive.superstructgame.net), hosted by the Institute for the Future, and her subsequent EVOKE game (http://www.urgentevoke.com) designed and run for the World Bank Institute to both explore and teach
participants to design local, context-specific initiatives that could change the world. Gaming approaches to futures exploration generated novel, unusual, crazy futures via the chaos and complexity of interactions during gameplay. As people respond, review, discuss, re-design, and synthesise their ideas with other gamers, entirely new perspectives emerge. The Institute for the Future has subsequently developed the Foresight Engine (http://www.iftf.org/what-we-do/foresight-tools/collaborative-forecasting-games/foresight-engine) which enables large-scale public discussion and exploration of emerging issues, creating futures by growing chains of forecasts collaboratively – the participants award prizes to the most interesting and most provocative, creating an incentive for imaginative craziness.

If crazy futures are unusual, assumption-challenging, perspective-busting futures, then collecting and actively listening to a wide variety of images and narratives about possible futures is critical. Two innovative platforms for collecting public narratives on change and impacts that point to emerging futures have recently been developed. Cognitive Edge’s Sensemaker software asks people to share stories that illustrate some aspect of a change or an emerging future, and then to signify their story’s most important meanings in relation to the topic. The software then compiles the story into a topography of meaning that highlights both agreed futures and futures in dispute. Futurescaper lets people share emerging issues of change and explore the potential cascades of impacts from those changes. The software supports participants in linking changes and impacts to generate emergent futures in a collaborative online workspace that also visualise the interconnections and emerging system. As diverse participants share and work through the collected narratives and mindmaps, novel insights emerge about possible futures.

What constrains crazy action for cities?
Cities, as mentioned previously, are large complex systems that encompass massive stable artifacts – roads, sewers, subways, buildings, sidewalks, cabling, transport and maintenance machinery. They also encompass massively stable cultural artifacts – people’s traditions, assumptions, path habits, and expectations. A city’s history is deeply rooted, physically as well as socially. The mindset of city politics is primarily a management mindset, focussed on maintenance and stability. Yet cities do change. They are complex, adaptive living systems, and so city politics and management also encompasses incremental change, but innovations take a long time to filter into the system and function smoothly. Cities are difficult to re-direct, even if re-perceived: it takes at least two generations to really shift a city – so think in terms of the next generation in redesigning an existing city – and the older the city, the greater the potential inertia and the longer it may take. Cities are very expensive to redesign and rebuild – much less to design and build from scratch, an approach that historically has yielded less than successful results.

But we are entering an age where city transformation might occur willy-nilly; an age of system limits and tipping points. Many nations are seeing the shrinking, rather than the growth, of their cities. Scarce resources and economic and social contraction make cities more desperate and therefore more driven to innovate. Many are finding that inventing a strategy to achieve a steady state is much more difficult than existing in a context of continuous growth. So now more than ever we need tools for creative, provocative, assumption-busting solutions leading to transformational urban futures.

What constrains cities? We do; our history and culture and systems do. But we can also make them crazy. The first step is challenging assumptions. So while you read all the essays and presentations on offer during this conference, ask yourself, “What assumptions, worldviews, paradigms, and values underlie these ideas? What assumptions underlie my own ideas? How are my own assumptions constraining my creative thinking about cities?” And then get crazy.
Three Priority Questions for Future Research

- What is the best method for sharing and discussing all the images and ideas about the future a cities’ residents have, in order to create a truly inclusive image of the future that invites creative action?
- What are the best methods for increasing social connections and strengthening social networks within neighbourhoods, across communities, and throughout the city? How do we create robust, sustainable, and smart social infrastructure?
- How can cities overcome constraints of outworn assumptions, of the inertia of traditions, and of the momentum of massive capital investments and costs, to become nimble in a context of dynamic change and sustainable in a context of environmental and social system limits – and still preserve what we most cherish about their innate character?

Notes
My great gratitude to Cynthia Frewen-Wueller, AIA and President of the Association of Professional Futurists, who generously contributed ideas and expertise on urban design and city futures to improve this essay.

For examples and further references of futures workshop tools, see my slidedeck, Crazy Futures aka Rx for Leadership Scotomas: http://www.slideshare.net/wendyinfutures/crazy-futures-why-plausibility-is-maladaptive
For Bill Sharpe’s initial use of Three Horizons in the Intelligent Infrastructure Futures Technology Forward Look (UK Foresight Programme), see: http://www.bis.gov.uk/assets/bispurtners/foresight/docs/intelligent-infrastructure-systems/technology-forward-look.pdf.


For public narrative collection and crowdsourced scanning, see Cognitive Edge’s Sensemaker Suite, http://www.sensemaker-suite.com/smsite/index_gsp; the Futurescaper futures crowdsourcing platform is here: http://www.futurescaper.com/

Crowdsourcing generally – see the recent symposium at the Oxford Internet Institute on crowdsourcing for policy; papers are available here: http://democracy spot.net/2014/09/25/over-40-papers-on-crowdsourcing-for-politics-policy/
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**Visioning the transformation of cities**

Anton C. Nelessen

U.S.A.

I. Introduction

After a life in planning, design, and architecture, I am certain of one thing: The key function of urban planning is truly understanding the vision of the people. Some call it “design by democracy.” Anything less fails to recognize our shared purpose of designing cities that meet a set of core policies that advance health, happiness, and prosperity. So I start, not with process, but with outcome: I ask, “Where do we want to go?” And then, I will ask, and hopefully begin a conversation, among us, to start to answer, “How do we get there?” And, at the bottom of it all, is the question: “Who are ‘we’?”

So, if you will indulge me, allow me to explore with you four basic policy goals that serve as the polestars—the vision—that over the last 40 years of practice, I have internalized as the “truth or the DNA of urban planning.” These will, if you give it some thought, answer that vital question of “who ‘we’ are?”

First: To generate public health, individual and collective wealth, and societal happiness, cities must promote walking. This is the basic human function of mobility, and it has been obscured by the culture of the automobile, especially in the United States, but also across the globe. So, Principle Number One: We must encourage walking. Second: Transit systems must reflect the lives of the people who use them. We must support high quality, user-friendly transit systems that connect homes to jobs, and jobs to services, and services to entertainment, and, ultimately, back to homes. Transit must be at one with the cycle of ordinary people’s lives.

Third: We must recognize the ignobility of automobile culture. We must understand that the parking of automobiles in high-density locations, if not everywhere, is the single greatest folly of urban planning. To cast this principle in the positive, however, is to recognize that present on-grade parking areas are the land banks for future healthy urbanization.

Fourth: We must appreciate that “connections,” whether through walkability, local user-friendly transit, or larger faster regional transit are the keys to network of successful city centers and adjacent urban neighborhoods. This is best described as a set of concentric circles of mixed-use activity, with magnificent, often-historical places at the city center.

And, so, this set of four policy principles is my starting point:

1. Walkability;
2. User-friendly transit systems, which encourage walking reasonable distances;
3. A de-privileging of the automobile culture; and,
4. A recognition that the city is an organic whole, with a beating heart at its center, and operational elements that must function in harmony with that animated urban spirit.

When I say to you “Paris,” or “St. Petersburg” or “Lisbon”, you will conjure visions of what? The Left Bank? The Hermitage? The small Fado clubs? Or, do you conjure visions of riots, violence, or poverty? Historically, both are equally likely.

Key premise: **Cities are living things.** We must plan their future as such. And these are the principles that, over the last 38 years, have breathed life into the approach I have used to learn the preferences of those
who will live, work, and play in the places we design. Let us ask, “What do the people want?” and then let us ask, “How will we know what the people want?”

II. The Visioning Constructs
There are two visioning constructs that will animate these four policy principles: These are eminently simple, but so easy to forget or brush aside:
First: Every human has a vision of how they would prefer to live, work, and play.
Second: Urbanization evolves over time and impacts this vision.
It is the essence of my claim that city design today should generate from the people, by the people, not by Robert Moses, not by a central planning authority, and not by me. It should generate from a “consensus vision.” It is the fundamental dynamic by which, I believe, we should determine how to plan: What is the consensus vision? Or, in more academic terms, I believe our fundamental drive, as urban designer, should be the answer to this question: Can we help generate a consensus vision of what participants want in their cities and regions and use this visual understanding to formulate policies, plans and codes to improve the quality of life?
If we believe, truly, in involving people in the urban design process, then we must accept that everyone has a vision for how they want to live, work, and play. What each person needs is an opportunity to express that vision, and the faith that those who control the money, development, and politics, will listen, see and implement.
I have come to understand that human desires are complex. Generating a consensus vision for the future of places over my career resulted in my appreciation that the input of people’s visions was instrumental to transform cities in a sustainable, healthy way. While I am reluctant to engage in reductionism, it is possible to appreciate the key elements through a basic formula that incorporates vision, experienced, intuition, and imagination:

\[ V = E + It + Im \]

*V* = individual vision  
*E* = individual experiences  
*It* = individual intuition  
*Im* = individual imagination

If we can accept that every person, especially the urban resident, has a vision for the future of cities, we need to ask ourselves, “How do you, as a professional visualize the transformation of cities? Do you privilege the vision, experience, intuition, and imagination of those who live in it, or do you try to impose your normative perspective?”
With this thesis in place, I make five demands of our conference:
First, I demand that we—as a group of planners, urban designers, policy makers, and urbanization specialists—answer the question of how do we visualize the transformation of the cities in which millions of human beings will spend their lives?
Second, I demand that we, as a group, answer the question of how we respond to the wealthy, powerful, and fashionable as they construct their cities of the future.
I demand that we, as a group, answer the question of how do our politicians—appointed or elected, representaives require the incorporation of the voice of the people into the vision of the city of the future? I demand that we, as a group, answer the question of how do we respect and, indeed, honor, the visions of the average people and the poor—who will be the majority of those living in these cities.
And finally, I honor the future when I demand that we require ourselves to appreciate how the millennial generation, the majority of the workforce on the planet, envision their homes: the cities of the future. To be successful there must be melding of everyone’s vision.

“Nothing happens on earth that isn’t first imagined in the mind.”  
Native American tribal saying

Part of our personal vision is “built in”. Every new human brain and biological structure contains inherit-
ed biological and mental engrams of the current and distant past that fuel imagination and intuition. It manifests itself in deja-vu in the present. Have you ever visited a new place and have the feeling that you have been there before? Or experienced a positive feeling like, “I really like this place”; or, “I am frightened here.” This response, be it negative or positive, will impact our current and future vision of urbanism.

To understand the positive or negative reactions to visions of place, it must be quantified based on the largest possible sample of participants.

*Plans succeed when councilors are many and fail when councilors are few*

Biblical Proverb

The Visual Preference Survey (VPS), which received a US government trademark in 1989, uses numerical responses to still and video images. Many are from their local community, many from other communities, complemented by computer simulations of before and potential after conditions. Participants rate images in multiple categories, using a 21 point scale, ranging from a +10 through 0 to a -10, based on the question, “How appropriate or inappropriate is the image you are seeing now and in the future for your community?”

It takes less than a second for participants to determine whether an image is positive or negative. Then they ponder for a few more seconds to determine how positive or negative they feel. The VPS is complemented by a demographic, policy and market questionnaire. It informs us who took the survey, what their response were to specific policies, many which reinforce the visual images, and responses to current and future market potentials.

Each response is “read” by a range of computer programs which provide the mean and standard deviation to the visual stimuli, with totals and percentages from the questionnaire from all participants. The responses to the VPS and the questionnaire are correlated to determine the profile of who took the survey and what their responses were to various images and questions.

The 40 to 160 images in a VPS and the questions in the questionnaire are selected after extensive discussions with community leaders, bankers and community groups. Thousands of images are captured or selected from an extensive image library; computer simulations of potential changes are prepared and tested, along with extensive logistics for participation at public meetings or on the internet. All the initial preparation is more than worth the extraordinary collective results. If a picture is worth 1,000 words than the results of the VPS are encyclopedic or, in today’s terms, wikipedic.
The collective attitude towards place is one of the most powerful factors molding our personal and collective visions of current and future urbanism. In our public applications, this formula helps explain the components of this collective attitude or core values of people.

\[ A = \Sigma \left[ ab \left( nb + mc \right) \right] Mm \]

- **A** - the collective attitude towards an image, expressed as a mean value and standard deviation
- **a** - individual attitudes (e.g., likes or dislikes urbanism)
- **b** - individual basic beliefs (e.g., city is good and safe or evil and unsafe)
- **nb** - normative behavior (e.g., what is considered ‘normal’ for you - when and where)
- **mc** - the motivation to comply (e.g., to be like everyone else, i.e., social acceptance)
- **M** - memory
- **m** - mood at the time of participation (hopeful, depressed, pleased to be asked)

Original construct by R. Scheidel

The collective response (A) recognizes emotion, perception and feelings as a legitimate source of knowledge, understanding and action. It is also a measure of hope, fear and anger. Images are the minds’ mental language. The higher or lower valued images give form to a person’s imagination, thoughts and feeling about place: it puts a value on the quality of the urban performance. The positive images reaffirm what participants want. The negative images are those they want changed. The more people visualize the positive possibilities the more they feel empowered; and the higher the level of empowerment, the greater the sense of hope and well-being.

*Fortus imagination generat causum*

Latin axiom: “a strong imagination begets the event itself”

**II. Urbanism Evolves and Impacts Personal Vision**

The second fundamental principle is: as urbanization evolves, it impacts personal and collective visions differently, depending on what phase it is in. Urbanization evolves over time through four primary phases, in a repetitive, ever expanding, lopsided spiral pattern. The trajectory is divided into four quadrants. At the cross axis of the graphic is the formulation of place, the initial site location. As a city grows, it optimizes and then starts its decline into deterioration and obsolescence, until it reaches the bottom of the spiral. For most cities, it evolves into renewal and redevelopment, followed again by growth and by optimization. As we know from history, some urbanized places have been through this cycle multiple times, while some others, at some point have deteriorated and never went through revitalization.

The visioning process starts with asking people to determine where their community is on this line. If the majority locates it in one given quadrant, it is the beginning of consensus.

We all know that there are multiple factors that can, and do change the trajectory thereby impacting visions and expectations:

- Location, climate, weather
- Global climate change, land use changes, sea level rise
- Available research, technology and tools
- Energy supply
- Resource availability – building materials, tools
- Beliefs, culture and religion
- Attitudes
- Exchange and commerce
- Communications and politics
- Expected quality of life
- Population growth and generationalism
Urban evolution becomes more complex as new ideas are generated and environmental conditions change. Attitudes depend on where in the cycle we began our life’s journey, which impacts our urban expectations. In the magazine Disegno No 6, Tony Dunne wrote: “Among students there is a thirst for something and some places that are different, something new, something more. The idea of simply going back to what once was before the 2008 crash is anathema to them (...) The millennials are looking to the future. Current reality isn’t working. There is a thirst for public and private utopias”. Their visions for the future are impressive and time is on the side of the millennials and the generations that follow. Visions take time to implement, but you must start with a vision.

IV. The Consensus Vision
No two cities are alike because of differences in their trajectory, location, and culture. Nonetheless there is common consensus as to the fundamentals that most urbanites want, characteristics that make urban places positive and acceptable within the 14 categories that typically constitute a city’s image. Let me start with two fundamental images, one the most common negative from all the categories and the other a commonly rated positive image. One is a typical arterial with a value of -7; The other is an urban street with a value of +7.

These are just an example of the many images and film clips that can demonstrate the visions of transformation that people want now and their urban futures and what must be applied to attain a successful, sustainable city.

What People Want
1. People want cities to have centers that are very active and heavily pedestrian oriented. City centers are highly valued if there are continuous and interactive, interesting ground level uses that focus on retail, culture, and civic places. Pedestrian streets in cores have VPS values ranging from +7 to +8.
2. People want their centers and neighborhoods to be interconnected, with localized public and private mobility options, including bicycles, trolleys, street
cars, light rail, BRT, buses and taxis that are within walking distance, easy to use, have frequent service, are convenient and on time. Local transport has VPS values ranging from +6 to +7.

3. People give open parking lots and low density arterials negative ratings. As cities become more populous and urbanized, there is considerably less interest in allowing private motor vehicles to enter and park in the inner city. On-grade and single use parking structures are a huge loss of urbanism’s investment potential. **Open parking lots in cities receive negative ranging from -4 to -7.**

4. Nature must be integrated into the form and fabric of the city. Nature includes parks, greenways, open water, wetlands, well landscaped streets, greens roofs, urban farms and community gardens. There is also growing concern about the global and local impacts of climate change and sea level rise. **Images depicting examples of integrated nature applications have VPS values ranging from +6 to +9.**

5. Building heights and very high densities are a concern for most Americans, unless it is in mixed-use buildings, in multiple use districts, and in an existing city that has a history of high-rise. High-rises are more acceptable in city centers adjacent to or above major transit nodes and public plazas. **Urban mixed-use buildings have VPS values ranging from +3 to +6.**

6. The VPS reveals that new building types and designs are more acceptable to the younger generations. Older generations prefer the more traditional building forms. **Green buildings that harness renewable energy sources are highly rated.**

7. Great cities should be well connected to other cities by multiple modes of mobility. Currently in the US this is primarily accomplished by multi-lane freeways typically clogged with traffic because they also are used by local traffic.

8. Successful urban areas must have a visually understandable master plan, capital improvement plan and a form-based zoning code. The collective vision must be translated into two, three and four dimensional graphics that people recognize and understand. And it must be promoted by all media.

9. Urbanism must be in a constant state of positive evolution. People must believe that their vision is possible and is being implemented. Successful cities must evolve towards one or more of the visions. When cities stop evolving, there is always some type of negative economic, political or social crisis.

The visions that are positive today better prepare us for what is to come. Implementation may be a generic version of the consensus vision interpreted in various options.

The VPS has also generated images that are neutral and negative places that generate negative energy, depression, fear and anger. This focuses attention on places that people want to see changed. Too much of what we currently build is neutral or negative and much has reached the quadrant of deterioration and obsolescence. These areas need to be rehabilitated with the best place making techniques. If you want to generate negative, depressed, fearful and angry people, then you only have to continue to produce negative or neutral urban places.

The implementation of the positive images in those places that receive the collective negative ratings is one of the strongest potential responses to the VPS results.

**V. Implementation**

There are four responses to implementation after a consensus vision has been generated.

The first is the transformative vision of the controlling financial and political interests, where function, safety and economics are the primary concerns. The vision of the politicians, bureaucrats and bankers gets built without much if any public input, and it may generate mixed results: sometimes the majority of the people like it; other times people find it negative and unacceptable.

The second is when the vision is implemented by personal resolve. The current millennials inclination
towards city living, less driving and more walking is certainly a result of that vision.
Third, there are cases where nothing or little from the public visioning process gets implemented because of political or financial disapproval or ineptitude. People become disillusioned and angry. Cities where this happens always languish until there is a change in political and financial leadership.
The fourth is a combination of bottom up and top down vision were politicians, financial interest and the people share the same vision of positive transformation. There could be small differences, but when a consensus vision is presented, containing visualizations that all thought positive and acceptable, the community is on the path to positive implementation. When the result of a public visioning process gets implemented, public interest, pride and well-being increase and politicians in charge are praised and re-elected.
Warning: As the distribution of wealth becomes more concentrated in the influence of fewer and fewer families, corporations and central governments, and if current trends continue, future cities could be controlled by the powerful and the wealthy, political and religious, oligarchy protected by police and military who “know what is best for the people.” If their vision is positive, accepted and programmed into people’s minds by media, many will be pleased. If it is negative and unacceptable, eventually people will become disillusioned, angry and depressed and eventually revolt. Let’s hope this doesn’t happen.

VI. Summary and Call to Action
Cities will continue to attract people primarily for employment, opportunity and inter-action. The increased population and the need to house, feed, employ and care for people is a basic need in each of the quadrants of urban evolution.
The planet currently is more than half urbanized with 30 urban agglomerations with over 10,000,000 residents. Growth in the majority of larger and smaller cities will focus on infill, redevelopment and expansion of existing urban agglomerations, mobility and infrastructure. Most of the growth will be for the younger populations, the millennials, who represent the majority of the world work force today. They will have average and low incomes and will demand a voice in the form and character of their habitat, which I expect will have a similar vision in principle, as I presented, but having a unique morphology and character, because no two places are really alike and need their own visioning process and results.
At the beginning of the 21st century, we are at an extraordinary time in the history of cities. With expected growth, the highest levels of technology, communications and research, we all recognize the global concern about climate change, sea level rise and the residue of years of colonization, deforestation, depletion of resources, particularly earth based energy (oil) resources. Will ‘bigger with advanced technology’ be the answer; or will it be ‘small and more sustainable’; or will it be some combination of the two; one for cities and one for rural areas? It is only through visioning that will we truly know.
If we want our cities and countryside to strive, we must generate and promote a vision of positive urbanization that is affordable, fantastic, prosperous and lively, putting our investments into form and character of urbanism that people want. We must include every segment of the creative classes who will contribute for a more positive future. We must include all five, currently living generations in the development and promotion of that vision.
In the next forty years, with increases and then stabilization of populations, cities can start to become, more urbanized, more dense and hopefully more beautiful, functional, interactive and resilient.
We must promote vision involvement, by word, deed, with media and assembly, with politicians and financial institutions to gather and promote the input of as many people as possible to create the urban future for this planet of cities. Visualization is a form of empowerment that is positive when it is inclusive; the
larger the sample, the more powerful and accurate the vision. A plan will succeed when it represents the vision of the many, and will fail when it results from the vision of the few.

*where there is no vision the people shall perish*
Biblical Proverb

To be successful, people must have a positive emotional attachment to place. We, as urban planners, designers, public health professionals share a common desire, commitment and responsibility to enhance, develop and redevelop equitable, affordable, efficient, sustainable and beautiful urban places. To achieve this transformed urbanism, visioning gives us the opportunity to listen and understand, to use that vision to plan and design urbanizations that have a character; that are positive and loved and maintained; that are places people are proud of.
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Urban metabolism and sustainability transitions

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The text of cities has so often held a certain unique poignancy; a mix of personal and collective sentiment and the sweet reach for an urban romance. This sentiment is only heightened by the fear embedded in urban chaos and system unpredictability, uncontrolled oscillation of complex behavior set in motion by the collective desires and actions of millions of souls. Even sober and deeply accomplished academic writing on the subject of cities, and especially on the future of our urban world (see Glaeser 2013, for example) is a blend of dark and luminescent neo-promotional prose that harkens back to the quaintly optimistic literature about the early days of the industrial revolution.

This kind of writing, while so dear to my own heart, has the tendency to maroon us on particularly beautiful intellectual islands from which it is difficult to navigate. Envisioning new technical-social arrangements sometimes clashes with visions that spring ready-made from our sentimental minds-eye.

For some time now we have been offered up a seemingly endless series of positivist images of the urban future to be, whether we find their origins from large international architecture and engineering consulting firms or from the fevered speculation of tenure track professors picking up the sci-fi wave of high-tech green as new paradigm, or alibi. The overwhelming tone of these images is their generic quality, their strong similarity to one another whether it be future Singapore or New York City, Hamburg, Masdar, or numerous eco-cities proposed and labeled around the world. A picture is worth a thousand words, but the imagery of green cities is the same generic 1000-word message over and over again.

Consider that today one would not think of sustain-

Singapore and Mumbai. When considering urban sustainability is it reasonable to think that Singapore and Mumbai can be considered in the same or even remotely similar way?
able, resource-efficient buildings in a generic sense. Anyone associated with efforts to move toward net zero energy and serious materials reuse and recycling understands the significant differences between buildings that accommodate vastly different types of human activities. In fact, today we know that it is extremely important to distinguish between many types of buildings and their accompanying energy and material requirements; laboratories, hospitals, retail malls, warehouses, car garages, etc. when considering design, technology and other strategies for a sustainable built environment. So when we speak of ‘cities’ generically are we speaking with any authority, or does this discourse reflect an immaturity and naïveté born of an arrogance of assumed yet critically incomplete understanding.

These thoughts spawned the motivation behind research to uncover useful differences among many thousands of cities; a search for distinctions and possible classifications that forms the core of this article.

Closely associated with the motivation to discover species and subspecies of urban resource consumption among the range of agglomeration economies is the idea that city types as they exist today may be telling us more about the evolution of cities than we currently appreciate.

The Urban Metabolism Group at MIT has analyzed hundreds of cities for the purpose of deriving the above-mentioned city typology. This typology is based on urban resource consumption (UNEP 2013).

Starting at the upper left hand corner and moving to the right in Figure 3, then proceeding to the next row, each city type is briefly described and a few representative cities are listed.

**Upper Row (Types 1-5, left to right)**

**Type 1** cities have low levels of resource consumption in all eight categories, except for water, which is found to be low to medium (India, Kolkata and Naihati; Indonesia, Jakarta and Surabaya; Cambodia, Phnom Penh; D.R. of Congo, Kinshasa, Sierra Leone, Freetown). **Type 2** cities also have low levels of resource consumption in all eight categories, except for biomass, which is found to be medium indicating the dominance of an agricultural economy (Nigeria, Lagos; Ethiopia, Addis Ababa; Senegal, Dakar; Guatemala, Guatemala; Mali, Bamako; Kenya, Nairobi; India, Mumbai; Ecuador, Quito; Myanmar, Yangon). **Type 3**, a combination of low and medium resource intensity; low consumption of total energy, electricity, fossil fuels, and industrial minerals. Emission of carbon dioxide is also low; cities in South America, Asia and Africa. **Type 4** show total energy, fossil fuel, electricity consumption is low as is carbon dioxide emissions.

Urban economies within this type are found in developing countries fueled by significant biomass–based
industries. **Type 5** cities have low carbon emissions while total energy, fossil fuels, electricity, industrial minerals and ores and construction minerals display a low-medium level and biomass and total material consumption are high. (Uruguay, Montevideo; South Africa, Durban; Brazil, Curitiba).

**Middle Row (Types 6-10, left to right)**
Total energy, fossil fuels, electricity, material consumption, construction minerals, industrial minerals and ores are all low for **Type 6** cities showing evidence of early stages of industrialization based on carbon rich energy fueled by coal and oil (India, Delhi, Bangalore, Hyderabad and Chennai; Vietnam, Ho Chi Minh City; Egypt, Cairo). **Type 7** consume biomass and total energy at low levels, fossil fuels at a medium level, emit carbon dioxide at a medium level and consume industrial minerals and ores, construction minerals and total materials at high levels. This is the only type that is comprised of cities of one country, Japan. Electricity consumption is low and everything else jumps to medium for **Type 8** (China, Beijing and Shenzhen; Brazil, Brasilia; Mexico, Mexico City; Turkey, Istanbul). In **Type 9** only industrial minerals and ores are at a low level of consumption and every other resource is medium or medium high (Serbia, Belgrade; Libya, Tripoli; Argentina, Buenos Aires; Iran, Tehran; Portugal, Lisbon). **Type 10** cities consume energy, construction minerals and emit carbon emission at the medium level. Industrial minerals and ores, total materials, and water are found at medium to high levels. **Type 10** cities are found in developed countries with diverse and industrialized national economies (UK, London; Germany, Berlin; Ireland, Dublin; Italy, Rome and Milan; Spain, Madrid and Barcelona).
Lower row (Types 11-15, left to right)

In Type 11 medium consumption is observed for carbon and industrial minerals and ores consumption, medium to high for water, biomass, total energy and fossil fuels, and high for electricity, total materials and construction minerals (France, Paris and UAE, Dubai are examples). Type 12 consume total materials, biomass, and construction at a low-medium level, total energy, electricity, fossil fuels and industrial minerals and ores at medium, and carbon dioxide at a high level (China, Shanghai; Israel, Tel Aviv; Russia, St. Petersburg). The lowest level of consumption, at medium is with industrial minerals and ores and the highest are at a high level for both total materials and carbon emissions in Type 13 (USA, New York, Los Angeles, and Seattle; Finland, Helsinki; Denmark, Copenhagen).

Industrial minerals and biomass are consumed at low levels in Type 14. Then there is a jump to medium-high with total materials, water and construction minerals and high for all energy components as well as carbon dioxide. Cities with this particular urban metabolism profile are all found in petroleum producing nations of the Middle East (Saudi Arabia, Riyadh; UAE, Abu Dhabi; Kuwait, Kuwait City; Qatar, Doha). Finally at the extreme end of the spectrum for urban resource intensity, all eight resources are consumed at high levels, as is the emission of carbon dioxide in Type 15. These cities are high consumers for all of the obvious reasons; low densities thereby requiring significant energy expenditures by automobile, high affluence, and challenging climates requiring significant building heating and cooling energy expenditures (USA, Phoenix and Chicago; Canada, Toronto and Montreal; Australia, Sydney and Melbourne).

The typology reveals many traits of city metabolism directly, as listed above. The typology also begins to imply illustrates an enormous range of urban resource consumption. Lower tier cities do not come anywhere near metabolizing materials, energy and water at the same rate or overall volume as those in upper tiers. These differences are not constrained by or defined primarily by national borders or distinct regions though there is certainly a segregation of types between the developed north and the developing global south (Fernandez 2014).

In addition, certain segregation can be seen in terms of climate though a stronger correlative factor is the type of economy and the value of the national production on the world stage. Cities in financial powerhouses and high technology regions clearly rank as most intense in their overall resource consumption though less intense in industrial materials reflecting the material-lean nature of these economic activities. The high overall resource consumption of these kinds of cities is again a reflection of the resource consequencs of wealth creation and unconstrained and even profligate consumption (as in Singapore).

The typology presents intriguing evidence, albeit broadly delineated and requiring more investigation, of strong cultural factors and forcing. Take for example the Japanese cities and their steadfast residence in a single type devoid of cities from any other country. The only good explanation for this extraordinary exceptionalism must include a consideration of cultural considerations; frugality, muted individual consumption, collective allegiance, of whatever. This paper does not pretend to even begin uncovering much less explaining the cultural forces that contribute to clustering of cities into one type or another.

However, the typology does indicate that we should make an effort to consider how cultural factors are playing a role in influencing the resource consumption of urban economies. There is another important aspect of the typology; the notion of types as states. In other words, the types that have been proposed here should be seen as static snapshots along a dynamic continuum; representatives of a set of particular situations along a temporal path. These paths may be populated by any number of the types that have been found in our study leading to the possibility that, with further study, one could delineate the transformation, or evolution of one state into another.
For example, a transformation that is so commonly cited that by now it has achieved fetish status for the sustainable futures cognoscenti is the urban transformation from dirty, sooty, industrial to clean, healthy, and service-driven. The popular press and the design world is now saturated with the rhetoric and sexy imagery of the coming new age of urban heaven populated by well-adjusted, well-educated, environmentally conscious adults whose children are all above average. Unfortunately, this world is real for a paper-thin slice through the world’s population. For many urban residents the city will continue to be dirty, sooty, and if not directly industrial, far from a post-industrial reality. However, transformations do occur. Just as national economies evolve, develop and transform, the cities contained within also change, adjust and transform in a variety of ways. The typology described above suggests numerous pathways intended, unintended, expected and unexpected. As stated before, more work is required to tease out actual historic pathways and reliably forecast that which will define our urban future (Ferrão and Fernández 2014). This work is important.

Recall again the fact that the vast majority of the world’s increase in urban population in the coming decades will occur in the developing world and that this increase will proceed at an unprecedented rate. There is no question the intensity of this urbanization means that a great many new urban residents will continue to live in poverty, and therefore, well below per capita consumption levels to be found in many cities of the developed north. However, cities create wealth. Despite their poverty, these residents will still be wealthier, and therefore possess greater potential to consume, than their agricultural brothers and sisters. This is the reason people go to the city and send money to their families in the countryside. They earn more; they consume more and contribute to resource consumption at greater rates.

Returning to the typology, it is clear that we are entering a period in which an enormous transformation is taking place, not toward greater global sustainability but toward greater resource consumption; that is toward less, or a less likely sustainable future. Urbanization will not act to reduce consumption but will be one of the major forces driving it upwards. The vast increases in population to the cities of the lower tier (the upper row in Figure 3) will push material, energy and water demands skyward while emitting carbon into the atmosphere toward the dreaded 500 parts per million by 2100, or sooner.

Furthermore, contrary to the great bulk of published and spoken wisdom on this subject this is as it should be. Urban populations need to consume more if we are to create a humane urban future. The cities of the lower tier are not a future we should aspire to. The world should become less sustainable before it directs itself toward the difficult task of global sustainability. So designers let go your sentimental versions of green and embrace the numbers that show we are headed toward a sobering and complicated urban future. Doing the right thing will require, for the foreseeable future, an increase in the resource intensity of the world’s urban population. Of course, you could conclude the opposite and believe that the only right thing to do is to advocate for resource efficiency in light of the serious global consequences ahead. However, this author strongly believes that were you to do so you will still be faced with the inexorable tidal wave of desire that will drive billions of new urban residents to acquire air conditioning, discover modern appliances, and eat more and more meat, and generally consume as much as they can afford.

References


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**The right to human flourishing and the production of space: implications for the planning of future cities**

Mee Kam Ng

Hong Kong

**Introduction**

‘The critical step towards democracy is to end one-party rule... Only when one-party rule ends, would talented nationals be able to serve the nation with their capabilities.’
Liberation Daily, 28 Oct. 1941

‘A democratic country should entrust its power in people’s hands’
Xinhua Daily, 27 Sept. 1945

The opening quotes of the 1940s by the mouthpiece of the Communist Party above sound particularly ironic today when the Central Government can literally be seen as shutting all the ‘gates’ towards genuine democracy for the ex-British Colony, Hong Kong, even though the Basic Law, the mini-constitution, promised universal suffrage of the city’s Chief Executive by 2017. Not only is the road to genuine democracy a long and treacherous one, value and ideological differences in the politically divided city are manifested in almost all space-related planning and development controversies, from development of the rural areas, redevelopment of slums and aged buildings to property development in high-tech development zones. Social movements can be seen as protests against a perceived collusion between the government and the capitalist sector in transforming all sorts of different spaces for the market, for exchange values.

Hong Kongers’ reputation for monetary pursuits has been boosted since her return to Chinese rule in 1997 as the Central Government has deliberately favored the capitalist class lest they choose to flee the ex-colony. The socio-economic and political situations in Hong Kong can be likened to a pressure cooker. The political and economic stress Hong Kongers face can be seen in the following figures. While the planning standard for local open space is only 1m2 per person, this humble provision was not met even in the Central and Western District, the financial and political heart of the city (SCMP, 2013). In 2013, the average living space of public rental housing tenants was a mere 13 sq.m. (HKHA, 2013, p.6). And the divorce figure in 2012 (23,255 cases) was 10 times the 1981 figure (2,062 cases) (Kao, 2014). According to a survey by psychiatrists, more than one-third of Hong Kongers suffer from mental illness (Ng, 2014). Yet, according to the first mental health survey for Hong Kong in 2010, only one percent of Hong Kong residents (population about 7 million) were receiving mental health treatment (Walker, 2010).

In pragmatic and over-crowded compact cities such as Hong Kong, it is extremely difficult for the extremely busy urbanites to engage in discourses on the issues of ‘rights’, ‘human flourishing’ and the politics of space production. Indeed, the image of urbanites moving back and forth in urban spaces planned and designed by others, producing for the sake of consuming as if this is the whole purpose of life is not unique to Hong Kong. Many have considered Hong Kong as a consumption paradise, a remarkable achievement when compared to its past as a post-WWII British colony. It is true that Hong Kong has made tremendous material progress. However, as can be seen from the above figures, it is obvious that people are not flourishing as a result of such progress. So, what do we mean by human flourishing? Do we have a right to human flourishing? What are the relationships
between the right to human flourishing and the production of space? What are the consequent implications for the future development of Hong Kong?

By explicating the relationships among ‘rights’, ‘human flourishing’ and ‘the production of space’, it is hoped that pluralistic and differential use values rather than homogenizing exchange values will be produced in future cities, including Hong Kong.

Rights
Nussbaum (1997-8, p.292) defines rights as ‘combined capabilities to function in various ways’. Aye Rand argues that ‘rights are a moral concept... that preserves and protects individual morality in a social context’ (Rand, 1964, p.47, cited in Rasmussen, 1989, p.99). Hohfeld (SEP, undated) identifies four incidents of rights. Active rights that include privilege and power such as the privilege of having a car allow me to use it and have power to sell or loan it out. Passive rights include claim and immunity. In other words, my claim over the ownership of a car imposes a duty on others to respect this property right of mine and my car should be immunized from vandalism etc. Of the latter rights, claim right is a positive right, that is, a right that demands the provision by others some service or good. Immunity rights are, however, negative rights, rights not to be interfered.

Rights to Human Flourishing
So what is the right to human flourishing? Before we answer this question, we have to understand the concept of human flourishing. According to Rasmussen (1989), Aristotle refers human flourishing to ‘the satisfaction of those desires which will lead to and constitute successful human living’ (p.90) and we have to ‘use our own reasons and intelligence in creating, obtaining, employing, and using the needed goods of life’ (p.94). As human beings are social animals (Rasmussen, 1999), human flourishing will only be possible when individual rights is protected in the wider socio-economic and political context (Rasmussen, 1998, p.95).

While she does not use the term ‘human flourishing’, Nussbaum (1992) identifies two thresholds of human functioning: a threshold of capability to function and a somewhat higher threshold that constitutes a good human life (p.221). Level 1 capabilities include the satisfaction of basic survival needs of the body (such as food, water, shelter, mobility), mind (such as capacity for pleasure and pain, cognitive learning, practical reason) and social relationships (including affiliation with others, nature and play with others with respect and non-humiliation) (op cit., pp.216-8; Nussbaum, 1997-8, pp.287-8). Level 2 capabilities include being able to: living a complete human life; having a good health; avoiding unnecessary pain; using the five senses; loving, grieving, experiencing longing and gratitude; reflecting critically; living for and with others and nature; having fun; and living one’s own life in one’s very own context with rights to governance and material possession (op cit., p.222; Nussbaum, 1997-8, p.288). Nussbaum stresses that the list is tentative, subject to plural and local specifications (1992, p.224).

Rasmussen (1999) characterizes human flourishing in the following ways:

• Human flourishing is an objective good that is found in action that actualizes the potentialities of a human being to achieve his/her natural end or telos (p.3);

• Human flourishing is an ‘inclusive end’ that embraces basic goods and needs such as health, friendship and pleasure as well as integrity, temperance, courage... (p.4);

• Human flourishing is individualized and morally diverse depending on what and what one is (p.5);

• There is no flourishing other than flourishing for a person (p.9);

• Human flourishing is a self-directed activity, that is, a person will his/her own ‘actions’ for self-perfection, to achieve practice wisdom (p.10); and

• Human beings are social animals and human flourishing or not depend on the community and culture, and whether the political framework is ‘compatible with the moral propriety of pluralism... The human good... is something objective, self-directed, socially achieved and yet highly personal’ (p.12).
In other words, flourishing human beings have to be ‘authors of their own conception’ (De Ruyter, 2004, p.384) rather than passive receivers of ideologies implanted into their mind. In other words, the rights to human flourishing require subjective efforts as well as a nurturing objective environment. These can only be realized through a value transition or a reframing process of what community psychologists would call the ecosystem of our lives from individual to micro- (family, schools work units), meso- (combination of micro-systems), exo-(neighborhoods, world of work, districts, cities) and macro-systems (cultural values, customs and institutions)( Ng, Mak, Wong and Cheung, forthcoming; Shaffer and Kipp, 2010, p.64). At the personal level, the practice of mindfulness (Kabat-Zinn, 2009) can develop our moment-to-moment awareness and the insight into patterns of thoughts, feelings and interactions with others; thereby skillfully choosing helpful responses rather than automatically reacting (Ng, et al, forthcoming). Being mindful also helps us understand the transience of all feelings, thoughts and material phenomena make us less self-centered so that we can appreciate the interconnectedness with other people (op cit., forthcoming). Mindful individuals help build more resilient families because of a greater capacity and ability to identify strengths in other family members to reframe issues and problems collectively so that adversities can be seen as opportunities for growth and development. As argued by McQuaide and Ehrenrich (1997), strength involves ‘the capacity to cope with difficulties, to maintain functioning in the face of stress, to bounce back in the face of significant trauma, to use external challenges as a stimulus for growth, and to use social supports as a source of resilience’ (p. 203).

Similarly at the community level, the planning process has to refocus from viewing only problems and issues to the making more creative and sustainable communities based on the strengths and ‘gifts’ of community members (Cameron and Gibson, 2001). As advocated by the Great Transition Initiative and the Earth Charter (Kates et al, 2006 cited in Gasper, 2009, p.27), society needs to change ‘from the values of consumerism...to a focus instead on quality of life; from individualism to

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<th>Active Rights</th>
<th>Passive Rights</th>
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<td><strong>Privilege</strong></td>
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| **Right to physical & mental health** | • Practicing mindfulness  
• Imagining, thinking & reasoning  
• Loving, caring, grieving, feeling  
• Having fun | • To reflect critically  
• To be composed in all situation  
• To connect with others | • Basic needs  
• Health and nourishment  
• Nature and environment  
• Recreation & enjoyment | • Free from oppression of all kinds (e.g. Iris M. Young’s five faces of oppression1) |
| **Right to resilient families** | • Strength-based perspective | • To understand & accept  
• To grow in adversity | • Family-friendly work environment  
• Family-friendly social amenities | • No discrimination |
| **Right to sustainable communities** | • Social network & social capital accumulation | • To protect local economic development  
• To conserve sense of community | • To place making & the development of sustainable communities | • Not to be demolished  
• Not to be displaced |

Table 1: Different Types of Rights to Human Flourishing. Source: author.

1 The five faces of oppression include exploitation, marginalization, powerlessness, cultural
human solidarity; and from domination of nature to ecological sensitivity and stewardship’ (Gasper, 2009, p.27). Table 1 below lists the various types of rights for human flourishing at different scales. The awakening to people’s right to human flourishing, to a good human life, has a lot of implications on the production of space and hence urban planning, an important tool in the modern era to allocate land to different types of uses. If human flourishing has to be a set of highly individualistic self-directed actions that aim at actualizing human beings’ differentiated potentialities in order to achieve each and every human being’s personal flourishing, these actions are bound to produce uncountable patterns of interactions that will produce numerous spaces of differentiation. The spatial manifestation of today’s highly globalized and modern world, however, seems to point to the opposite direction.

**The Production of Space**

To boost competitiveness in an increasingly global market, the common rhetoric is about an urgent need to produce spaces for exchange value and very often, the knowledge employed is highly technical and detached from the needs of individuals, families and local communities. Lefebvre (1991, p.22) argues that ‘[w]here there is space there is being’. If there were only spaces for exchange values, there could be no space for ‘being’, not to mention human flourishing. As argued by the Wildflowers Institute (2005, p.3) ever since the advent of capitalism, spaces for wealth accumulation and public services as dictated by the state have been growing whereas spaces for personal growth and replenishment have been diminishing (Figure 1).

Indeed the growing hegemony of spaces for exchange values is often aided by the state through formal planning and development without the public noticing. No wonder Lefebvre argues that ‘space is a social product’ (1991, p.26), to serve as ‘a tool of thought and of action’, ‘a means of production’, ‘a means of control’, ‘of domination, of power’. Hence, it is important to realize that ‘space is social morphology’ (op cit, p.94) and could possess ‘terrifying hidden power’ (pp.263, 269) behind a cloak of rationality (p.282) such as land use zoning (p.317) that regulates life (p.358). Therefore, spatial practices that homogenize and reduce differences need to be counteracted because this cannot be spaces for human flourishing. What do we need to do to realize our right to human flourishing through a right to space? As human flourishing cannot be achieved without a value transition or reframing of the ecosystem that embeds human lives, we have to realize that the production of space for exchange values, for city competition, for economic prosperity is just one part of a much larger

![Figure 1: Wildflowers Spaces for Building Socially Sustainable Community. Source: Wildflowers Institute, 2005](image-url)
ecosystem. Instead of reducing human beings to economically calculating rational beings, we have to constantly remember that our well-being is related to the nested micro-, meso-, exo- and macro-systems (Shaffler and Kipp, 2010, p.64). ‘The Aristotelian holds that money is merely a tool of human functioning and has value in human life only insofar as it subserves these functionings’ (Nussbaum, 1992, p.231).

Hence, more money is not always better. Indeed, in ‘Aristotle’s ideal city, fully half of the land is publicly owned, and the rest is ‘common in use’, meaning its produce can be taken by anyone who is in need’ (Nussbaum, 1997-8, p.298). We need to recognize the interconnectedness of our collective existence and restore an ecologically integrated perspective before we can ‘re-perceive’ (Shapiro et al, 2006, p.377) what options and possibilities do we have in producing spaces for human flourishing.

If human flourishing concerns the satisfying of body needs, the fulfillment of the mind’s desire and the nurturing of interrelationships among unique human beings, we have to re-examine the lived experiences of our urban lives. We have to remind ourselves that ‘every social space is the outcome of a process with many aspects and many contributing currents, signifying and no-signifying, perceived and directly experienced, practical and theoretical, every social space has a history one invariably grounded in nature’ (Lefebvre, 1991, p.110). In other words, space is always ‘a field of action and a basis of action’ (op cit., p.191). And only when it is used, filled with actions by willful individuals to actualize their potentialities in their nested ecosystem that promotes human flourishing of all, then ‘real wealth’ is produced (Lefebvre, 1991, p.341).

**Implications for the Planning of Future Cities**

To realize the rights to human flourishing, the goal of public planning has to focus on the nurturing of people’s ‘combined capabilities’ through plural and local specifications (Nussbaum, 1997-8, p.293). Future cities cannot afford to be contented with the single-minded pursuit of economic growth, the satisfying of basic needs. Instead, it should honor the basic rights of people to co-generate knowledge through their contextual lived experiences, social and spatial practices and have a say in the forms of decision making that affect their flourishing in their uniquely local and pluralistic ways (Heron and Reason, 1997, p.228). Citizens should be vigilant in practicing ‘mindfulness’ (Kabat-Zinn, 2009), to refuse an automatic adoption of external thoughts, to ‘re-perceive’ real and available options for their well-being (Shapiro et al, 2006, p.377). These will have huge implications on our education system, our work ethics and ways we bond with our family members and fellow citizens.

The integrated ecosystem approach to our social space and to our understanding of human flourishing put families in a uniquely important position. As Morse argues (1999, p.290), ‘the family does a very important job that no other institution can do’ as the family is the nurturing ground for our abilities ‘to trust, cooperate, and self-restrain’. ‘Without loving families, no society can long govern itself, for the family teaches the skills of individual self-governance’ (op cit., p.290).

The question is how to encourage families to adopt ‘strength-based’ approaches to transform the problems they face into opportunities for growth (Walsh, 2006, pp.xiii, 7). How to leverage community or societal resources to meet the needs of families rather than allowing the shortage of resources within one’s family to produce further harm, especially in a hostile capitalist work environment where firms try to make the fewest possible commitments to its workers presenting ‘a constant assault on the possibility of happy families’ (Marris, 1998, p.17).

The implication of the right to human flourishing in the planning and design of communal space is even more evident. Such space cannot be produced by professionals through centralized institutions. It inevitably involves an ecosystem of actors or interest-ed parties (Lefebvre, 1991, p.419), with a high degree of ‘self-management’ (p.416) so that spaces can be transformed into ‘myriad possibilities’ (p.423). Indeed
communities in the building of our future cities have to learn the skills of asset-based development. Like families, instead of focusing on the problems and issues, the focus is to recognize human talents and gifts. Human beings should be inspired to act, to develop their potential, to invoke their self-direction to produce spaces of differences in order for their potentialities to be actualized. It is a co-generation of knowledge about ways of attaining well-being through people’s lived experiences and social practices. This sifting and winnowing and sharing of real life experiences will make the localized production of space more inclusive, encompassing, more democratic and just, more accessible for human flourishing (Horsfall and Titchen, 2009, p.158).

If the rights to human flourishing were realized, everyone will have the opportunity to follow his or her senses to actualize their potentialities to serve one another—the co-produced spatial outcomes will be a lot more uncertain and yet pluralistic, convivial, surprising and sustainable!

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The process of urbanization has a huge and enduring impact on economic and social development in China. Sustainable processes of urbanization in China will allow a healthier development of cities and better living conditions for people. The key aspects of our study focus on six areas: the population; land; financing; industry; transport; resources and environment, which will be most directly affected and by the process of urbanization.

This study develops scenarios for sustainable urbanization in China for the coming 20-30 years. It considers the following aspects: a sustainable urbanization process with a full free movement of the population; more intensive utilization of land; more diversified financing actors; the agglomeration of industry and economies of scale, which will become a major driving force of sustainable development and urbanization; and public transport playing a larger role within and inter-cities, together with better patterns of recycling and utilization of resources towards green living and lifestyles. Consideration is given to the current state of affairs and the major paths of reform and policy measures needed to achieve a scenario of sustainable urbanization in the six areas considered.
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Planning for growth: urban and regional planning in China

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China has a long-standing culture and planning norm. The rule of city planning is recorded in Kao-Gong-Ji. The Chinese geomancy, or fengshui, influenced the site selection of the city. However, the modern meaning of city planning as civic design and building regulation only appeared in the late imperial era. Western influence began in Treaty Port cities. As shown in the examples of the Capital Plan (of Nanjing), the Great Shanghai Plan, and the Shanghai Metropolitan Plan in the era of Republican China, these advanced modernist plans have not been materialized but they have had a long lasting influence on Chinese planning ethos.

Urban planning during the socialist period was only part of the overall mechanism of a centrally planned economy. It was an instrument to ‘materialize’ economic development targets. Planning during socialism experienced ups and downs and was abandoned during the Cultural Revolution. The planning rationale was to facilitate state-led industrialization, and policies across national and local scales were formulated to achieve this mission. The workers’ villages were a distinctive feature of socialist planned development. However, actual territorial planning has been difficult because of the dominance of hierarchical structures and state work-units. In contrast to the ‘socialist monumentalism,’ city planners more or less played the peripheral role of technicians.

The Chinese planning system has been quite complicated, consisting of three parallel types: urban planning, land use planning, and economic planning. The 1990 City Planning Act allows the city government to enforce development control, and hence is a milestone in Chinese planning history. However, planning power had not covered the rural area until the 2008 City and Countryside Planning Act. In the meantime, the land authority managed to develop its power to allocate a developmental land quota. The statutory planning system consists of a master plan and a detailed plan. The urban system plan is a kind of statutory plan at the provincial level but has never been enforced. Planning consultancies and design contests became widespread practices, along with the commodification of planning activities. The Chinese planning system is essentially a permission-based and administrative-led one but this character has opened the door to discretion and transformed planning into a development tool.

The outstanding feature of planning during market transition is the emergence of entrepreneurialism to

Suburban housing projects at Jiading new town in Shanghai, indicating the strategic suburban development driven by city planning
facilitate the land-driven growth machine. The fiscal policy, economic governance, and planning incentivized the city government to promote economic growth and land development. The county-level strategic plan of Kunshan is provided as an exemplar to illustrate how planning has been used to unshackle the development constraint and keep the thrust of expansion. Another example from the city of Zhengzhou shows how city planning created an ambitious new district and attempted to develop the vast rural area between two cities even further. Under urban entrepreneurialism, the vision of the ‘socialist countryside’ has been turned into the space under the hegemony of the city. A new type of ‘non-statutory plan’—the so-called ‘strategic plan’ has been invented to suit the need to use planning as place promotion. More plans have been prepared under urban entrepreneurialism in China.

Reversing the trend of decentralization is the emergence of planning at national and regional levels. Planning is used as a new method to deal with the problems created by urban entrepreneurialism and local expansionist plans. In addition to region building efforts, the national urban system plan has been created. However, it has not been implemented because at the same time another type of plan—the ‘main functional area plan’ has been created by the system of economic planning. Although prepared in the style of the ‘scientific development approach’, this new type of plan has not really achieved development coordination. At the regional level, there are competing experiments such as the Pearl River Delta Urban Cluster Coordination Plan and the Yangtze River Delta Regional Plan. But the city-region plan has been driven by another impetus: the local government wishes to use this type of plan to strengthen its position and, further, to get recognition from the central government. The characteristic of Chinese new planning practices during market transition is perhaps best represented by new town and eco-city planning. In the socialist era, the development of new towns was difficult because there was no mechanism to fund infrastructure. However, in the post-reform era, new town planning is becoming an ambitious place-making activity. Examples of the development of new towns in Beijing, Shanghai, Nanjing, Kunshan, and Shantou are provided to suggest that new towns are in essence mega urban projects. More recently, a special type of new town has been created—the so-called ‘eco-city’. The planning of eco-cities continued the urban expansion thrust but also reflected the directive of the central government under the pressure of carbon emission politics. Originated from the first attempt at Dongtan, now there are more cases including Tianjin Eco-city, Caofeidian International Eco-city, Wuxi low-carbon new town, and various eco-communities. Planning has been used to stimulate and facilitate the development of these projects.

The intriguing question is why Chinese planning has not been abandoned in the course of market transition. With the reference to Western planning experiences, three explanations are offered. First, planning has adapted well to the market; second, planning is used to cope with market crises; third, planning helps the state extend its power through the market mechanism. It is thus interesting to note that ‘planning for growth’ is not equivalent to ‘planning for the market.’ The third explanation sounds uniquely Chinese but there is actually a similarity between Chinese ‘planning for growth’ and the notion of ‘post-political planning’ in advanced market economies in the West. Policy mobility and transfer are discussed. It is debated whether planning should serve its paymaster—the client—or social justice. The opinions of Chinese professional planners on this matter are illustrated in their debates with their own Twitter community. There has been a long-standing thrust for Chinese planning to achieve modernization and economic prosperity. In China, planning is not necessarily ‘an enemy of growth.’ China might be the exception to the rule. However, this exception is becoming increasingly difficult to justify in planning for the future, because growth-oriented planning creates a variety of problems.
The book
In contrast to the popular imagination of being procedural or even the ‘enemy of business’ under neoliberal attack in the West, planning in China was resurrected after economic reform and is becoming a key driver for fast urbanization and economic growth. The book Planning for growth: Urban and Regional Planning in China traces the origin of Chinese modern planning in the Republican and Socialist eras and offers an accessible text on its complicated planning system. Broadly speaking, planning activities in China include three different types, respectively under the directory of construction, land administration, and development and reform commissions. This complicated institutional set-up reflects the tension between promoting growth and implementing development control.
The book provides three explanations for why the Chinese planning profession has experienced a boom during market transition. First, planning has been commoditized and has adapted well to market development; second, planning has been transformed to cope with the crisis brought about by marketization; and third, planning has created legitimacy for growth and strengthened the role of the state during market transition, which has in turn enhanced its own position. The legacies of planning as modernization and development visualization laid down the foundation of a proactive planning approach.
The book examines planning practices under urban entrepreneurialism and recent attempts to coordinate development through national and regional planning. Fascinating examples of new towns and eco-cities planning are illustrated with a close look at their planning and development processes. The book gives a historical and panoramic overview of developments and changes in urban and regional planning in China. With a ‘comparative gesture,’ it complements its classic counterpart on Western Europe and North America.

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Urban governance and financing in China 2050

Zhi Liu
China

Introduction
Today 730 million of China’s 1.36 billion citizens (or 54% of total) live in cities. The number is expected to reach over 1.13 billion (or 75% of total) by 2050. There is no doubt that the management of the Chinese cities will be especially important for the well-being of urban population and the functioning of urban economy. Urban governance and finance is a crucial factor in determining how well cities are managed. What will be the most likely scenario of urban governance and finance in China by 2050? I will attempt to answer this question based on three considerations. The first is historical, as urban development is path-dependent. The likely scenarios of 2050 will be influenced by what happened in the past decades. The second consideration is the expected effort of the society trying to steer the course of urbanization towards a vision that is desirable, feasible, and consistent with the level of socio-economic development of China by 2050. As China has started a new round of economic reforms, the next few years will be pivotal for where China’s urbanization is heading to. The third consideration is the influence of some foreseeable constraining factors, such as rising labor costs, aging of population, shortage of fresh water, and climate change, which are expected to prevail in the next 35 years.

In the following text, I will first provide a brief overview of China’s urban development over the last three decades and its consequences. Then I will examine how the new reforms, if implemented, would shape the course of urbanization and the modality of urban governance and finance in China for the next few decades. I will also discuss a vision that the society may prefer for urban China 2050, and highlight how the most relevant constraints would influence the course and pattern of urbanization. Finally, I will summarize the key political challenges that China may have to take up in order to achieve the vision for urban China 2050 and build a desirable system of urban governance and finance.

The Recent History
China’s urbanization since 1978—the year when economic reform started—has been rapid. China’s total population grew from 963 million in 1978 to 1.36 billion in 2013, while the share of urban population grew from 18 percent in 1978 to 54 percent in 2013. The physical development of cities is visibly dramatic. Most cities, large and small, have expanded in population and area by several times. A number of metropoli-

![](image-url)
Shenzhen, a metropolis that was once a small town with 50,000 population 35 years ago. Today, more than 10 million people live here, with 300,000 new residents yearly. Meanwhile, numerous satellite towns in the Pearl River Delta have sprung up. The nation’s economic activities are pre-dominantly concentrated in cities and metropolitan areas.

Behind the massive urban development, however, are a number of urban economic, social and environmental problems. Take a few examples: traffic congestion, air pollution, water contamination, rapidly growing local debts, rapidly rising housing prices, inefficient urban land use, over-conversion of farmland to urban use, growing social tension arising from unfair compensation to farmers in the process of rural to urban land conversion, and widening gaps of income distribution between urban and rural residents.

The urban housing sector exhibits a sharp contrast between achievements and problems. In 1998, the government initiated an urban housing policy reform, changing the mode of housing supply from public provision to market provision. In 2004, the government further emphasized urban housing sector as one of the pillar industries of the national economy. Since then, the housing market has entered a golden decade of rapid growth. Today, nearly 90 percent of the urban households own at least one housing unit. However, the market may have grown too far. Housing unit vacancies are extraordinarily high. A recent nationwide survey conducted by the Southwestern University of Finance and Economy indicates an urban housing vacancy rate of 22.4%. Beijing alone has three million vacancies. Despite the high level of vacancies, housing prices have risen rapidly for almost 10 years. The price-income ratio in most big cities has reached over 10, implying that an average housing unit would cost 10 times of the annual income of an average household. The ratio in Beijing has reached over 20.

The high sales prices also push up rental prices, and make it difficult for the low-income households to rent a housing unit. In response to the housing crisis for the low-income households, the government plans to provide 35 million housing units to the low-income households over the 12th Five-Year Plan period (2001-05).

What are the underlying factors behind the housing market phenomenon? I argue that it is highly related to the peculiar mode of urban governance and finance in China. The mode is powered by the urban governments’ ability to mobilize and capitalize land resources, which has evolved from China’s economic growth strategy since 1978. In the early years of economic reform, the central government adopted an open-door policy to take advantage of the investment opportunities from globalization and the abundant domestic supply of cheap labor and cheap land.
Learning from Singapore and Taiwan, the government set up special economic zones (SEZ) in several selected coastal cities. To attract manufacturing firms, these cities improved infrastructure and developed a large amount of rural land into serviced industrial parks. The approach succeeded greatly in attracting FDI and was copied by many other cities across the country in the 1990s and 2000s.

The incentive of urban governments to attract investment and employment is created by China’s peculiar governance structure. The administrative system consists of five levels: central, provincial, prefecture, district/county, and township/village. Local governments include all four levels under the central government. There are three levels of cities: provincial, prefecture and county. The central government sets the national development targets and appoints political leaders at the provincial level (who in turn appoint political leaders at the prefecture level, and so on). The local governments are all-purpose governments, responsible for the local economy and employment, as well as the provision and management of municipal services.

The national GDP growth targets achieved by all levels of local (or city) governments chasing the same target with whatever means possible within the legal and fiscal framework. This mechanism creates a strong incentive among local leaders of the same level to compete for the best GDP growth performance, in exchange for the best chance to be promoted.

The fiscal means available to local governments are limited. The current tax sharing system was established in 1994. The central government determines all tax rates and tax assignments (i.e. what taxes belong to the center, what belong to the local governments, and what are shared between the central and local levels). Local governments essentially possess no tax power, and are not allowed to borrow directly from commercial banks. However, city governments found various ways to raise additional funds, including most significantly sales of land use rights for real estate development, and borrowing from commercial banks indirectly through city government-owned urban development investment corporations (UDICs). As a result, a general pattern of fiscal revenues and expenditures under the tax sharing system for the last two decades is that city governments spend much more than the tax revenues they have (including inter-governmental transfers).

The sales of land use rights for real estate development are only part of the land operations by cities. In competition for investment and employment, most cities offer sizable industrial land to manufacturing firms at very low prices or even free of charge. City governments believe that the newly attracted manufacturing firms would bring in jobs, GDP and local tax revenues, and the new jobs would generate new demand for housing and services, the expanded supply of which would generate further local GDP and local tax revenues. However, the heavily subsidized industrial land has led to considerable inefficiencies of industrial land use across the country.

The costs of subsiding industrial land are covered by the revenues from sales of land use rights for real estate development. The prices of commercial and residential land are many times (ranging from 5 to 15) higher than the industrial land prices. This is made possible by the legal arrangement that city governments are the monopoly provider of land for urban development. By China’s Land Management Law, only
local governments are given the legal power to convert rural land into urban land. Moreover, the compensation to farmers for rural land taken is not set at the market price of the land, but at the agricultural production value. The low cost of rural land acquisition combined with the monopoly supply of urban land makes it possible for city governments to profit hugely from land development. Land operations at the city level are heavily constrained by the national policy for farmland preservation that a national total of 1.8 billion mu of basic farmland must be preserved for food security purpose. Under this policy, each province must maintain a fixed amount of basic farmland. When a certain amount of basic farmland is taken for urban development, the province must generate the same amount of basic farmland elsewhere within the province. This strict policy significantly limits the total land supply for cities. Taking away the new land for industry, infrastructure, public administration and affordable housing—which generate little revenues to city governments, there is just a small fraction (often about 15-20%) of new land left for commercial and residential development, pushing up land sale prices. This mechanism generates significant amount of land revenues to the city governments, but also contributes to the high prices of housing. It is widely believed today that the cost of land accounts for about 30% of the final sales price. The high prices induce the sector to supply a large quantity of housing units every year, causing the high level of vacancies. The question is why housing demand remains high despite high prices? The key reason is that households purchase housing units as the only (perceived) viable way of household investment. The saving rates of China’s urban households, 25-30%, are high. But there are very limited viable options for households to keep the value of their savings. RMB is not yet internationalized, and investing savings overseas is not feasible for most households. Inflation has been high over the last few years. Interest rates paid to the savings accounts are low due to lack of competition in the commercial banking sector and strong government interventions to control interest rates. Stock market is poorly regulated and not transparent, and its overall performance for the last six years has been money-losing despite continuing growth of the economy. Moreover, the practices of quantitative easing (QE) by the central bank have led to plenty of liquidity, which is mainly absorbed by the real estate market. In summary, the urban and housing problems are caused by a number of distortions imbedded in the Chinese growth model, such as cheap credit from state-owned commercial banks, low cost of land taking from villages, the power of city governments as a monopoly of urban land supply, and lack of consideration of opportunity cost of capital in public investment decision making. All these have resulted in the over-exploitation of natural resources and land, and inefficient and wasteful public investments. This growth model is running out of steam now as smog, water pollution, traffic congestion, and housing crisis set in to punish the model.

The Pivotal Time
The central government appears to recognize the root causes of the urban problems. On November 12, 2013, the Third Plenary Session of the Communist Party of China’s 18th Central Committee issued a document entitled “Decision on Major Issues Concerning Comprehensively Deepening Reforms,” which spells out a set of reform directions. The decision calls for achieving decisive results in key reform areas in 2020. Among the reform directions are a few directly related to urban governance and finance, which are listed as follows (excerpts from the English translation of the Decision):
• Shift the role of government by building itself into a service-type government that bases its functions on the law.
• Form a comprehensive assessment system for officials’ performance to rectify the one that overem-
phrases GDP growth.
• Improve the budgetary system. Establish a standard and reasonable debt-management system for central and local governments and a risk-alert system.
• Form a construction-land market that unifies urban and rural areas. Allow the sale, leasing and demutualization of rural, collectively owned buildable land under the premise that it conforms to planning...Reduce land allocation that does not promote public welfare.
• Build a healthy urbanization that puts people at the center. Reform of the hukou (or household registration) system will be accelerated to help farmers become urban residents... Efforts should be made to make basic urban public services available to all permanent residents in cities, including all rural residents. This includes the affordable-housing system and the social security network.
• Improve the taxation system. Perfect the local taxation base by gradually raising the share of direct taxation...Accelerate property-tax legislation and related reform at an appropriate time.
• Improve financial markets. Further open up the financial industry...Promote reform toward a registration-based stock-issuing system and increase the proportion of direct financing. Accelerate interest rate liberalization and capital-account convertibility.
• Reform environmental protection and management systems. Establish a system in which all pollutants are monitored and regulated. Release timely environmental information and improve the reporting system to strengthen social supervision. Improve the pollutant-discharge licensing system and control the pollutants. Polluters who damage the environment must compensate for the damage and could receive criminal sanctions.
• People's congresses should provide more supervision of the government's financial budget and State-owned assets. Governments at all levels must report to the local people's congresses before adopting important policies.
• Develop grassroots democracy. Improve the system of grassroots election, discussion, publicity and responsibility.

• Give big cities the right to make regulations.
• Improve the service quality of urban management.

The above reform directions are proposed to correct various policy distortions in the urbanization process, especially in urban governance and finance. It touches upon the role of government, land, hukou, municipal finance, financial sector, environmental management, and urban governance structure. The most fundamental is the call for de-emphasis on the pursuit of GDP growth.

The key question is if these reforms get implemented and how soon. As these reforms are meant for structural changes, their implementation is expected to slow down the economy in the short-run before paying handsome dividend. Unfortunately, at the time being, China suffers from excessive productive capacity and slump export as a result of stagnation of the global economy, and domestic consumption is not yet strong enough to propel the domestic economy. Investment remains the only driver to GDP growth. Even though this option has long been excessively deployed under the current growth model and the return to further investment will be diminishing, it is expected that the government will continue to rely on investment to drive economic growth for at least the next two years, to deal with the threat of unemployment and social instability before the global economy recovers.
The land policy reform aims to increase the share of land development benefits to farmers. This will also raise the transaction cost of land development to the cities. It is expected that cities will face new challenges in municipal finance, as land sales revenues constitute 30%-60% of the municipal revenues. According to the reform directions, residential property tax will be a new tax to be introduced. The central government is in the process of drafting the property tax law. This may take at least 2-3 years before the law is passed by the National People’s Congress. It will also take a few years for cities to establish a working system of residential property assessment and administration. Therefore, it would be years away before residential property tax becomes one of the main sources of municipal revenues.

However, the introduction of property tax will be significant in shaping urban governance in the future. Residential property tax is local tax, introduced on the justification that the revenues would be used by local governments to provide local public services which would constitute a portion of the property value. As such, taxpayers are expected to demand for the rights to influence and participate in the decision making and performance monitoring process of municipal budget expenditures. This bottom-up pressure will fundamentally change the management style of city leaders, from responding to the directives given by the higher level, to responding to the need of the city residents.

**Vision of Urban China 2050 and Its Constraints**

Recently, the World Bank and the Development Research Center of the State Council jointly published a study report entitled “Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization,” which is perhaps by far the most comprehensive analysis of China’s urbanization problems and options. The study articulates a vision for urban China by 2030, which is highlighted by the title of the report: efficient, inclusive, and sustainable urbanization. As the study grew out of wide public consultation and built on extensive public policy debates, the articulated vision could be considered as the shared vision by the Chinese society.

There would be little disagreement on what vision of urban China should be desirable, but the major debates would be focused on how to achieve the vision. The new round of reforms will likely pave way for the achievement of this vision.

I believe that the same vision would be still relevant for urban China by 2050, perhaps with an addition of “resilient” urbanization if the ability of cities in dealing with disaster emergency caused by climate change and unexpected human errors is considered. If China is able to undertake the difficult reforms for the next 5 years and achieve the above vision by 2030, China’s urbanization is likely set to cruise toward 2050.

The level of urbanization is highly associated with the level of per capita income. As a reality check, I take a quick look of China’s economic prospect for 2030. The Chinese government aspires to lead the country to surpass the so-called “middle-income country trap” and move up to the rank of high-income countries by 2030. According to the World Bank definition, a high-income economy is one with a gross national income (GNI) per capita above US$12,746 in 2013. Today China’s GNI per capita is about US$6,000. To reach the level of GNI per capita over US$13,000, an annual growth rate of 5.4% would be required. This will be achievable, but will not be an easy task.

Some foreseeable constraints and unexpected geopolitical conflicts may also constrain China’s effort to achieve high-income country status by 2030 as well as the vision for urban China 2050. I consider the most relevant constraints—rising labor costs, aging, water shortage, and climate change, but will not touch upon the likely geopolitical conflicts due to the limit of this paper.

Rising labor costs are eroding one of the most important comparative advantages of China in the global economic competition. Many manufacturing industries that drove China to become the “world factory” are now moving out of China in search for locations with cheaper labor costs. China will have to adjust to
the new economic condition where labor costs are no longer cheap. What will China produce for the global market in the future? Obviously, China must move up through the global production value chain and enter the knowledge economy. However, the economic structural transformation will not be easy and China will need to make significant effort to nurture the favorable conditions for innovation and creativity.

Aging of population would reduce labor supply and increase the overall social costs of caring the aged. Aging of China’s population is another trend that may slow down China’s move toward high-income country status. In 1980, population with age over 65 accounted for only 5.1%, and this share increased to 9.4% in 2012. Part of the reason for this increase is the one-family one-child policy. Recently, this policy was relaxed for couples who are both the only child of their respective families. However, it would take at least another 15 years to see the real improvement of the age structure of the population. Aging is particularly detrimental to the Chinese economy at this point in time as the shortage of labor would reduce the return of additional investment, which remains to be the only option that the government could deploy to boost economic growth.

Shortage of water is going to be a binding constraint for urbanization in China and it has significant impact on the spatial pattern of urbanization. Geographic distribution of water is very uneven in China. The northern China is in short of water while southern China has abundant water resources. Urban and industrial development in northern part of China has caused significantly lowering water table and water pollution. To address water shortage in Beijing area, for example, the central government invests heavily (in the order of magnitude of a trillion RMB) for a mega-project that channelizes river water from the South to the North. However, the water tariff in Beijing does not reflect the marginal cost of water supply. Fresh water is increasingly becoming a scarce resource in China, and it would certainly add to the costs of urban development especially in the northern region. China will need to remove the price distortion in order to manage the use of scarce water resources efficiently.

Climate change—a trend at the global level—will also affect China’s urbanization to a certain extent. Climate change is considered a real threat to the world. China has committed to reduce CO2 emissions per unit of GDP by 40%-45% of the 2005 level by 2020. Recent results show that the effort appears to be on track, but it is expected that the marginal costs of achieving further CO2 reduction will increase significantly after the “low-hanging fruits” are gone. It is uncertain if China is able to achieve the CO2 reduction target while maintaining desirable GDP growth target or level of employment. Moreover, rising sea level and more intensive storms are increasingly threatening the safety of many coastal cities. In response, cities must pay close attention to disaster management and preventive measures.

**Likely Scenario of Urban Governance and Finance**

A major transformation of urban governance and finance is necessary for China to achieve the vision of urban China 2050, not only because the current problems have their root causes in the current system of urban governance and finance, but also because a new system is required for better efficiency, social cohesion, sustainability and resilience in urban development. What would the new system of urban governance and finance look like if China achieves efficient, inclusive, sustainable, and resilient urbanization by 2050? I would speculate the elements of the system, assuming that the new round of reforms gets implemented in the next 5-10 years and results are achieved in key reform areas. Firstly, if the new round of reforms gets implemented, we would expect to see the following results:

- Market mechanism will play a primary role in urban economic growth;
- Business firms will be free to choose cities for business at the level playing field;
- Households will no longer be constrained by the hukou system and will be free to migrate to any city of
their choice;
• The rural and urban construction land market will be unified and compensation to farmers for land takings will be based on market value of the land;
• Interest rates will be liberalized, and RMB internationalized;
• Stock and bond markets will be well developed and regulated, with high level of transparency;
• Prices of urban services, such as water supply, will be further reformed to more closely reflect the social and environmental costs of service provision.

Secondly, we would expect to see the key elements of the urban governance and finance as follows:
• The primary role of city governments is to manage cities, especially to manage and finance the growing expenditure need for public infrastructure and public services;
• City governments will no longer rely heavily on land concessions to generate revenues, although land-based financing will remain to be a viable land value capture tool for financing of public infrastructure;
• Broad-based income tax, consumption tax and property tax will be the main sources of municipal revenues;
• City governments will be able to raise fund from the capital market (e.g. by selling municipal bonds) based on the cities’ own creditworthiness;
• City leaders will be locally elected and mainly respond to the need of the city residents, and their decisions and performance will be subjected to the monitoring of the city people’s congresses (or city councils) that have full representation from the residents.
• Some forms of metropolitan-wide regional governments will emerge to provide cross-jurisdiction public services in metropolitan areas.
• Some forms of grass-root governance arrangements, such as home owners associations, will emerge to protect collective property rights commonly seen in urban settings.

The above speculated elements represent the features of a local government in democratic societies. A major political challenge for the above scenario is how feasible to have democratic city governments when the nation’s political structure remains to be one ruled by one party. It is hard to predict the political future in China as there is no clear political reform and timetable from the top leadership. The current political regime will continue to be viable as long as China overcomes the current socio-economic difficulties, continues to grow, and becomes more inclusive. Nonetheless, political reform appears to be inevitable as widespread phenomena of corruption, rent-seeking, and moral hazard have significantly shaken the trust of the general public on the government. It would be highly likely that the political reforms will be advanced in a fashion of strategic incrementalism, i.e. a small step at one time with a clear roadmap. If this turns out to be the case, it would make sense to see democratically elected and managed governments first emerging at the city level.
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1. Introduction

1.1. Latin America is one the most urbanized regions in the world. "Today, more than 80% of the population lives in cities. This high proportion is similar to that in the most-developed countries. By the mid-21st century, 91.4% of the Latin American countries’ populations will be living in cities, followed by Europe (90.7%) and North America (90.2%). The number of cities has multiplied by a factor of 6 in the last 50 years. Nowadays, half of the urban population lives in cities with over 500,000 inhabitants, while 14% of them are located in megacities. Over 222 million live in cities and 65 million in the latter category. On the other hand, new urban configurations have been arising, resulting from city regions affected by the implosion-explosion processes foreseen by Henry Lefebvre as the threshold of the emergence of urban society. As an example, one may mention the constitution (still in progress) of the Brazilian megalopolis (around the São Paulo-Campinas-Belo Horizonte-Rio de Janeiro axis) with over 45 million inhabitants, the Mexican megalopolis (in the Mexico City region) with more than 34 million, and, lastly, the Argentinean (around Buenos Aires) with about 12.5 million.

1.2. According to the recently published UN-Habitat report, “State of Latin American and Caribbean cities”, the future of societies on the continent will be closely dependent on what is going to happen in the cities over the next 30 years. On the one hand, due to the fact that urban society has emerged through cities that are still strongly characterized by informality, there are issues, such as a lack of good housing conditions, a deficit of basic urban services, environmental degradation, social inequality and urban segregation. Such features may be considered as legacies of the explosive growth evidenced during the period 1950-1980, besides the model of accelerated industrial development based on the concentration of income, wealth and power.

1.3. Nevertheless, in the last 30 years, Latin American countries have undergone a very important moment of inflection that has opened up hopeful prospects regarding the future of their cities. A new urban transition is in evidence, derived from the acceleration of demographic transformations and resumption of economic growth related to income redistribution within a democratic consolidation process.


The aforementioned report points out the remarkable inflection trends in the urbanization processes that create prospects for better futures in the cities, as well as maybe contribute to the construction of better societies. The actual outcome of such trends is going to depend on the political and institutional capacity of societies to take advantage of the opportunities resulting from this inflection, and even to face its challenges. Firstly, let us examine some of these transitional urban features:

2.1. Urbanization in the past occurred with very fast, intense transfer migration from rural spaces to the cities. The countries of this continent have undergone about 40 years of demographic pressure in their cities, which has generated a model of urban-
ization characterized by housing informality and illegality, a lack of good quality urban services, and social inequality.

2.2. A drastic decrease in rural-urban migration. Decreasing fertility rates followed by changes in the age pyramid. Cities have been benefited by demographic dividends along with a higher growth rate of those of working age in comparison with the proportion of children and older persons in the population. The expected global effect regarding this scenario is a decrease in the dependency ratio of the population over the next 30 years, which will give an opportunity to expand investments supported by this working age population.

2.3. The decrease in population pressure tends to decrease the magnitude of the typical problems of very rapid growth, such as a housing deficit and lack of basic services. This fact is creating the possibility of more focused investments to improve the quality of infrastructure, services and public spaces.

2.4. In the recent period, the urban network with urban primacy has been changed throughout the faster growth of the central cities located in large metropolitan agglomerations. This trend has responded to the economic and demographic deconcentration process, reducing the pressures and problems of megacities. However, this is a relaxation process insofar as the cities, which have received such a flow of activities and people, are the ones situated in a metropolitan influence ratio.

2.5. The overcoming of cycles of stagnation, debt and inflation in national economies that emerged on the continent in the 1980s and 1990s, has created conditions for cities to drastically relieve their suffering of the effects of global recession. In the 80s and 90s, successive crises caused cities to dramatically compound their social problems, such as urban poverty, social fracture, violence, etc. In the 2000s, the city has no longer been conceived only as a social and environmental liability due to the emergence of new economic growth areas, even when it is due to globalization and changes in production processes. Although most of the benefit is concentrated in a handful of large metropolitan areas, more than two thirds of the region's wealth is generated in the cities. Therefore, the range of those that contribute to the expansion of this wealth and its by-products resulting from potential urban centers has increased over these years.

2.6. The emergence of public policies regarding social protection, income transfer and social minimum guarantees has also focused positively on affected cities by reducing poverty and social inequality and increasing the stability of social life. These public policies have also acted positively in countries where the resumption of policy commitments to housing provision, designed for population groups historically marginalized by the business housing property market. In some places, housing policy is based on direct subsidies to aid this population.

2.7. Shantytown (favela) urbanization and land legalization policies have emerged in many countries on this continent. After an aggressive experience, removing residents from informal and illegal spaces, such policies may represent a significant inflection of traditional standards related to exclusionary public intervention.

2.8. In many countries, shantytown urbanization policies are an integral part of urban reform programmes, determined by principles of the social function of property, land use and regulation, universalisation of urban services, recovery by the government of part of the valuation of urban land, and democratic city management. For instance, in Brazil, the conception of urban reform has been viewed as principles and instruments of institutionalized intervention through constitutional and legal provisions.

3. Medium-term challenges
The transitional trends in progress, briefly presented above, create social, political and institutional condi-
tions for action to confront huge structural, urban and environmental problems, giving hope of better cities in the future. This is an important fact for urban societies emerging at an accelerated pace. On the other hand, some opposite trends must become the object of concern for researchers and planners:

3.1. Macroeconomic trends. After the moment of crisis derived from a development model based on industrialization via import substitution (1980 and part of the 1990s) as well as on the neoliberal experiment, the economic growth of the countries on this continent has experienced dynamic growth that has reduced social inequality. In turn, it has also promoted social inclusion and the expansion of the domestic market, heavily affected by the "China effect" on the global economy. The global crisis that started in 2008 has generated various effects on the Latin American economies, especially their urban reality. Thus, it is worth observing the trends related to the “reprimarisation” of national economies entailed in expanding their sectors of production and exportation of natural resources and low value-added commodities. This fact might have a constraining effect on urban investment opportunities in favour of economic infrastructure investment that enables export logistics.

3.2. Legacy of urban problems. The cities on this continent have remained strongly affected by inequality, segregation and division in the social organization of the territory. There are impacts on the structure of opportunities to enable universalisation of primary education and market expansion. Some researches point out, e.g., the democracy effectuation of educational opportunities for children in the public sector may be limited by poor quality housing privation and urban segregation effects on the living conditions of families and the scope of their social lives (Katzman, 2011; Ribeiro & Katzman, 2008). Other studies indicate that urban segregation evidenced in the Brazilian metropolises has brought reproductive impacts of inequalities in the labour market (Ribeiro et al, 2009).

3.3. The new competitive urban policies. Some cities have been changed into growth machines (Molotch, 1976) under the action of three forces: an influx of part of the financial capital from the European and American urban accumulation circuits due to the crisis experienced in 2008; existence of financial assets at low cost; the use of urban investment as a tool for sustaining capital alliances between public housing and works with national political parties that support such investments as a machine to make profit, income and votes; and, finally, strategies derived from local coalitions of the competitive insertion of cities into the global market of the entertainment industry and the international division of consumption.

This policy evolution changes the urban investment agenda regarding those that could, in the long term, structurally transform the population’s welfare and decrease social inequality. These policies put pressure on city governments to abandon their commitments relating to urban reform goals, and likewise the universalisation and quality increase of collective services. This scenario favours intervention in the urban accumulation incentive in order to concentrate urban investments in certain districts and territories for the purpose of turning them into attractive places for global capital. A significant exemplification of this tendency may be given by the current urban policies in Rio de Janeiro, entirely designed for the city’s insertion into the international division of consumption relating to the mega events, the 2014 World Cup and 2016 Olympic Games, which impact regressively in terms of the population’s real income distribution (Ribeiro, L. C. Q., 2014).

3.4. Trends of urban sprawl. Despite the substantial reduction in demographic pressure noted in the past, cities have grown physically 2 to 3 times more quickly than the population. Such a fact is derived from the combined action of three forces: increase in the price of land located in central areas due to
property speculation, resumption of vigorous policies regarding social housing construction by central governments, adoption of the American model of urban enclaves on the outskirts of large cities by part of the middle classes. It is opportune to mention here three consequences of these urban sprawl forces: they tend to raise the price of expansion and maintenance costs of urban services, contributing as well to forcing out the population living in poverty to areas far from the richer urban fabrics, which hinders the possibility of harmonization through urban equity. Regarding the lack of public policies for mass transport provided by public systems; an urban sprawl process also tends to make cities even more dependent on the public roadways and private urban mobility systems.

3.5. Finance of housing production. Housing provision in Latin American cities has historically been the result of three systems: self-production, responsible for a significant part of housing construction; just-in-time production, especially for small builders, considered by many as informal; production related to national capital development companies, some constituted as family firms acting in local markets. The articulation among these various types of housing provision has brought about a residential segregation model quite typical of Latin American cities, since it combines social distance with territorial proximity of social classes throughout the social organization of urban areas established in large cities.

Over the past few years, an important transformation relating to this housing provision system has been occurring through the participation of big companies in property development and the construction field. As a result of this transformation, we may point out: notable pressure from the adoption of city regulation models favourable to urban property businesses; a tendency towards urban land enhancement; a tendency to transform this social organization of territory into displacement of the low-income population to peripheral areas.

3.6. Civil societies. In recent years, the resumption of social movements has been occurring in some important cities in order to campaign for the right to the city. In Brazil, the remarkable Landless Workers Movement (“Movimento dos Trabalhadores Sem Terra” – MST) has brought the Homeless Workers Movement (“Movimento dos Trabalhadores Sem Teto”) into existence. As an expression of this kind of trend, it is also worth mentioning a movement based on “Cooperativismo Habitacional Autogestionário” (Self-Managed Housing Co-operatives) responsible for disputing with big companies the right to access housing construction credit as a social right (Lago, 2012). The emergence of these movements has put pressure on the governments of important cities for adoption of a kind of public policy guided by these urban reform goals, principles and tools. Recently, as noted, a master plan for the biggest Latin American city, São Paulo, might create mechanisms to attract urban assets to return.

4. Long-term challenges
The urban society foreseen by Henry Lefebvre as a historical legacy of industrial society is becoming concretised throughout the world, a global reality in emergence. Such transformation has generated new impacts and challenges for the future of nations, which are distinct due to the different historical trajectories of their countries and continents in their particular industrial development eras. The United Nations Human Settlement Programme (UN-Habitat 1996) has declared the emergence of the “Urban Age”. Many authors have been talking about the strong evidence of the trends to extend and concentrate the urbanization forecast by Henri Lefebvre as movement of implosion-explosion built by the new forms of territorial capitalism development. These trends require new theoretical approaches to urbanization processes and their morphologies (e.g. Brenner, 2013).

From our own experience of the urbanisation that has occurred in Latin America, we would point out the following:
4.1. The challenge of metropolitan and new urban forms of governance. The process of urban implosion-explosion associated with the rescaling of national states (Brenner, 2004) has been generating new dynamics of territorial occupation and new socio-territorial configurations, weakly captured by imprecise concepts, such as city-region, megalopolis, global city, etc. In all these new national territories, we find a paradox expressed in the contradiction between the growing economic significance for the countries and the non-existence of institutional systems and policies that would endow them with governability.

The political system observes two trends that hinder the transformation of cities in political space. On the one hand, there is the under-representation in regional and national parliament. On the other, there is a strong presence in the metropolis of a parochial pattern of political representation (Rojas and Ribeiro, 2013). In the field of public policy, government actions are characterized by sectoral and local interventions generating a fragmented pattern of urban governance.

According to the UN-Habitat report (2012: 133):

In the region, the debate about devolved and redistributive functions of economics transfers and competences between different levels of government is still on-going. Considering the vast differences between countries and within them, the promotion of harmonization and territorial cohesion policies is crucial to ensuring an equitable development of all cities.

4.2. The challenge of quality urban welfare. Just as the construction of the concept of Human Development was important as a conception of the criticism of economic growth, today it has become imperative to construct a concept of urban development capable of evaluating the degree of real welfare provided by the material progress of the economy. In emerging urban society, democracy opportunities and even social cohesion will become progressively dependent on the built environment found in the various city models. This challenge has particular importance in countries featuring late industrialisation, as they evolve urban society with gigantic metropolises that are precarious, informal, unequal and environmentally unsustainable.

Concerning this issue, the INCT Observatório das Metrópoles has elaborated a measurement indicator, the Urban Welfare Index - IBEU in Brazilian metropolises:


IBEU is seeking to promote a welfare urban dimension of Brazilian citizens measured by market power,

Figure 1 - South America. Cities with over 20,000 inhabitants in 1950 and 2000. Source UN-Habitat (2012)
via mercantile consumption, as well as by social services provided by the State. Such a dimension is related to collective living conditions supplied by the city’s built environment in terms of housing and neighbouring scales, besides urban services and equipment. IBEU also covers 15 Brazilian metropolises.

In order to achieve its main goal, IBEU is conceived as two types: Global and Local. The Global calculation consists of using the set of 15 national metropolises in the country so as to compare urban living conditions on three more scales among metropolises, metropolitan municipalities, and neighbourhoods integrated in this set of metropolises. Local IBEU is calculated specifically for each metropolis so as to evaluate the internal urban living conditions. IBEU also has five dimensions: urban mobility; urban environmental conditions; urban housing conditions; urban collective services and care; and urban infrastructure. Each of these dimensions is formed of a set of indicators based on the 2010 Instituto Brasileiro de Geografia e Estatística census.

4.3. The challenge of knowledge. The pattern of fragmented production of the knowledge predominant in the industrial period is inadequate for a correct understanding of the reality of urban society. Fragmentation by fields of knowledge, disciplines and themes does not produce knowledge of urban fact as total social fact. In addition, it does not form the basis for the design, methods and instruments necessary to create appropriate public policies for urban society. The scheme (Figure 2) below illustrates the fragmenta-

tion across areas and sub-areas of knowledge organization relating to the metropolitan theme based on the Brazilian Science, Technology and Innovation System

According to the scheme above, one may note how the conception of a metropolis is articulated to a range of fragmented types of knowledge linked with each other in some way. In other words, the Human Sciences interact with the Applied Social Sciences, which, in turn, have a close connection with Engineering (see the link between Architecture & Urbanism to Civil Engineering). At the same time, Basic Environmental Sanitation – related to Engineering - ties in deterministically with the Public Health area, which is the very field of knowledge whose major impact reflects on the quality of life in the metropolises, and, notably, the whole range of basic needs of its population. Therefore, regarding Public Health, it is undeniable that it concatenates with the field of Sociology,
since the observed interaction among metropolitan inhabitants generates not only the idea of Collective Health (its principal area of knowledge), but also Sociology itself - casting a shadow over each other's distinctions and focus. Thus, it is worth mentioning that many of these areas have their own "branches" of knowledge that should not be seen as a hierarchy concerned with their original areas - after all, these branches might be just representing the variety of subject matter of a specific type of knowledge. Therefore, complexity and sophistication are notable aspects that are outstanding in the knowledge scenario in which the metropolis lies.

Regarding the metropolis, the fragmented knowledge presents an "isolated feature" also articulated integrally with other types. This is precisely what provides the governance functionality and dynamic aspects of the metropolis, especially its urban welfare issues. Alluding to the idea of fragmented and integrated knowledge, individual welfare deals with an idiosyncratic side embracing important issues, such as income and consumption levels, besides the human development index lied on education and longevity indicators. On the other hand, there are others found on a more comprehensive, networked side, represented by urban welfare, remarkably circumscribed by the collective interests of living conditions and social reproduction.

From this point of view, this intricate network of knowledge provides consistency to the metropolis’ completeness, whose impacts involve its physical configuration - i.e., spatial and/or territorial - as well as an abstract configuration, largely including the discussions, reflections and studies that determine the urban welfare guidelines: mobility, environmental and housing conditions, collective services and care, infrastructure, etc. I believe we are facing the knowledge challenge identified by Henry Lefebvre in his famous book, "The Urban Revolution". Written under the impacts of the May 1968 protests, he pursues a historical series of changes in the emergence of a new society, whose urban phenomena would turn into a total social phenomenon (something substantially sought after by anthropologists and sociologists), implying the transformation of a knowledge production mode derived from industrial society:

“Neither the separation of fragments and contents, nor a confused reunion can define (thus express) the urban phenomenon. It depends on a total reading together with aspects of a geographical, demographic, economic, sociological, semiological, lexical, etc nature. The urban phenomenon may not be defined as an addition nor as a synthesis, not even through its superimposition” (Lefebvre, 1999 [1970], p. 157).

References


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World and European sustainable urban dynamics

More than half of the world population is living in cities and by 2030s five of the world’s eight billion people will live in urban areas. The cities of the South grew by 500% these last forty years. By 2030, almost two billion people will inhabit the great urban slums of Africa, Asia, Latin America and the Middle-East. Many of these large urban areas risk becoming centers of criminality and disaffection. They may become focal points for extremist ideologies and urban insurgency.

In the EU, currently 360 million people live in cities and their peripheries. This represents 72%. In 2050, this figure is expected to rise to 80%. Europe is in the front-line to demonstrate the possibility to reconcile the concentration of needs and services with the urban welfare and well-being (cf. EU strategy for a smart, sustainable and inclusive growth). The Homo sapiens urbanus is and will increasingly be the norm.

The OECD and the International Energy Agency estimate that the investments devoted to infrastructures and housing - largely in cities - will amount to 200 trillion dollars over the next 20 years while the European Commission calculates that 1 trillion Euros is needed only to ensure the European’s energy installations and infrastructures of the next two decades.

Urban societal stresses abound: rising poverty and social inequality, racial tensions arising from the cohabitation of individuals with different cultures, religions and values, and the high number of long term unemployed including the largest part of the 14 million of European youth termed NEETs - "not in education, employment or training". These stresses are complementing major
techno-economic challenges like traffic congestion, air pollution, urban waste, clean water and energy supply. Overall, these social, political and environmental issues could be significant in humanitarian, economic and security terms.

Cities have a key role to play and vast panoply of instruments in their hands: waste and water management, green public procurement, mobility and housing improvements (cf. public transport and green spaces, social housing, eco-tourism) but also to stimulate the new markets for ecological and local products. "Urban mining" has also a large potential: for making one gold wedding ring, one would need around 10 tons of golden ore but only 10 kilos of mobile phones.

Cities are also breeding grounds for knowledge creation, material flows, trade and transport. For centuries, several European cities assumed the role of "piazza" of world affairs: Cambridge and Oxford for education, Florence and Berlin for cultural exchanges, Rotterdam and Antwerp for transported tonnage, London and Frankfurt for finance, Paris and Milan for fashion and design.

Cities are the heart of major social and environmental struggles, as well as grand scientific, technological and medical advances. They are emblematic of the balance between precaution and innovation, respect for nature and its exploitation. In cities, both positive and negative externalities are exacerbated. The conflicts between traditionalists and progressists are the more acute.

Promoters of a new universalism ("cosmopolitism") are faced by the resurgence of conservative habits. The outward-looking perspective pushed by globalization is encountered by the local inward looking view afraid by the difference and by the foreigner.

Cities must tackle trade-offs to multiple and competing objectives. They are under threat by consequences of rising population densities; terrorist movements; resource scarcity and climate change (cf. critical infrastructures, flooding, etc.). But at the same time, cities are transformative spaces fostering the emergence of new opportunities like Living Labs, urban farming, short-circuit economies, active and healthy ageing, social innovation and do-it-yourself communities where citizens are actively taking responsibility for shaping their urban future.

A "resilient energy Union and forward-looking climate change policy" as called by President Jean-Claude Juncker on 15 July 2014 needs to start within cities where most of European citizens live, where energy efficiency measures can better take pace, where smart and ICT solutions can easily be implemented, where transport savings can be boosted in a win-win way for both the environment and the economy (growth and jobs).

Among the EU programs, initiatives for European cities will be promoted by Horizon 2020, the research and innovation program for R&I from 2014 to 2020 and in particular its Societal Challenges dealing with energy, transport, environment, inclusive and security issues; by the European Regional Development Fund (ERDF) that will allocate a minimum of 5% of national ERDF funds to integrated sustainable urban development actions; and by other European programs like INTERREG, EPSON, INTERACT and URBACT as well as other initiatives like the Joint Programming Urban Europe, CIVITAS, the Covenant of Mayors, Smart Cities and Communities as well as the European prices such as the European capital of culture, the European...
green capital, and the European capital of innovation. A European citizen use in average 16 tons of resources per year and 6 tons are thrown away from which half is buried in the ground as landfill. Europe imports most of its material: from 100% for cobalt and titanium, to 64% of zinc and 55% of the energy needs (mostly oil, gas and coal). Europe needs to become the first to apply the cradle to cradle concept and the world leader in the circular economy.

The development and implementation of new ideas, products and services are the future of European cities: “Co-creation” to ensure a collaborative and innovative economy; ”Beyond GDP” to consider indicators like life expectancy, education and gender equality; "Intangible investments” to cover R&D, training and ICT; "Negawatt” in reference to passive houses, efficient heating systems and smart transport; and "Socio-ecological transition and nature-based solutions” fostering green, healthy and sustainable living.

European cities have a bright future if they succeed to become “hubs of knowledge and innovation” that build on the expectations of society while valuing their cultural heritage and boosting their creative capacity. L'éloge de la densité should substitute l'égoïsme de la dispersion (sprawled cities) and the nightmare of hyper-concentration. The civic city should replace the barbarian city with a revival of dialogue and democracy instead of vulgarity, aggression and violence. The closed city should become the open city. The proprietas should give place to usus where the access to the services are more important than the ownership. The black and white infrastructures (roads and lighting) should switch to blue and green infrastructures. The aménagement du territoire should not anymore be a business for urbanists, engineers and architects only but for any single European citizen buying or renting a house, thinking on its mobility patterns and finding innovative and sustainable ways of living.

![Diagram](Image)

A vision of European socio-economic cohesion (Source: D. Rossetti, 2014)

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**Illustrations:**

Fossil fuels and global emissions – 1970-2010 (Source: European Commission, RTD, AUGUR project)

Energy consumption and urban density in European, Asian and American cities (Source: Newman and Kenworthy)

A vision of European socio-economic cohesion (Source: D. Rossetti, 2014)

The vegetal cities (Source: Luc Schuiten in European Commission “World and European sustainable cities”)
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**URBACHINA: European Project on Sustainable Urbanisation in China Historical and Comparative Perspectives, Mega-trends towards 2050**

François **Gipouloux**

France

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**About UrbaChina**

Funded under the European Commission’s Seventh Framework Programme, UrbaChina is a collaborative project managed by a consortium of 11 leading Chinese and European research institutions. Coordinated by the CNRS (France’s National Centre for Scientific Research), UrbaChina analyses China's urbanisation trends for the next 40 years and define possible future scenarios with reference to concepts of sustainability.

UrbaChina places strong emphasis on the cooperation between the EU-China. Although Europe and China have followed different urbanisation paths, there is nonetheless room for mutual learning. One of the main objectives of this project is to strengthen the collaboration between Chinese and EU researchers and policy-makers driven by the common goal of building sustainable cities.

**Hypotheses.org**

As part of UrbaChina, this blog aims at identifying the latest news on four specific themes regarding urbanisation in China: the institutional foundations and policies for urbanisation, the territorial expansion of Chinese cities, the infrastructures and services for sustainable urbanisation, the building of urban communities:

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