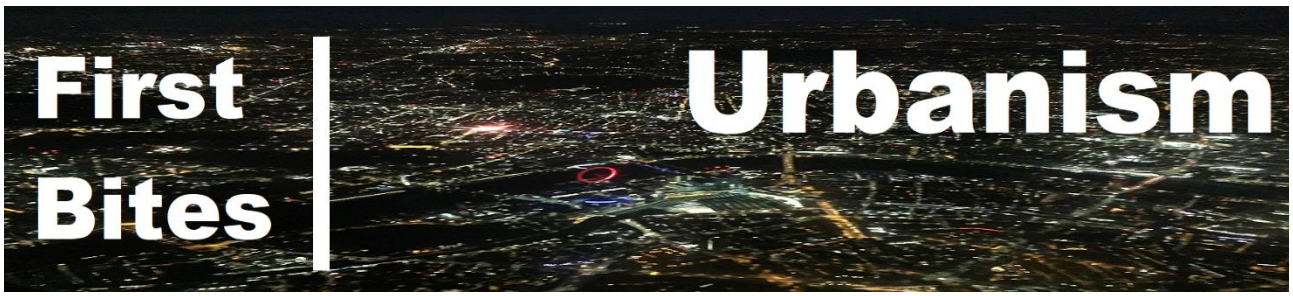


First Bites are, as the name suggests, my first attempts to take my random notes and bring them into some sort of order. I am doing them primarily for myself so as to make it easier to refer to content and see how potential sections and chapters of the PhD might shape up, but I thought that others might find them useful, and I'd welcome any comments.

These ARE NOT draft chapters, they are WORKING NOTES and as such are likely to be full of errors and omissions and half-baked ideas, so I strongly suggest you check sources should you want to quote anything! Note that the references are for the eventual chapter, not just this First Bite.

If you find this one useful and would like me to do more then please let me know. The better ones may well form the basis of formal research papers, and all will feed into the eventual PhD thesis.

More information on the PhD at http://taunoyen.com/wiki/doku.php?id=phd and you can contact me at david.burden21@bathspa.ac.uk.

This is the last of the three First Bites on foundational, non-military, urban considerations.

Theories of Urbanism

A large number of theories around the design, planning and development of cities and urban spaces have been proposed over the centuries. Some key ones are identified in Box 1. A useful visual guide to modern urban-isms is at Chen et al (n.d) at https://issuu.com/taubmancollege/docs/theories-and-methods-of-urban-desig.

Box 1: Interesting and Influential Urban Planning Theories

- Garden Cities (Ebenezer Howard, late 19th Century);
- Geddian trio of Work, Place, Folk (Patrick Geddes, late 19th Century) – each area plays to one or two of the trio;
- Concentric Zones (Ernest Burgess), see Mapping the Urban below;
- Sector Theory (Homer Hoyt), see Mapping the Urban below;
- Multi-Nuclei Theory (Harris and Ullman), see Mapping the Urban below;
- Le Corbusier's "City of Tomorrow";
- The rigid plan city (Haussmann, mid 19th Century)
- The Broadacre city (FL Wright) – an acre per family taking the Garden City concept to extremes;
- The non-plan city (Banham, Parker, Hall and Price, 1969) – the anarchic opposite of the rigid plan city
- The Neighbourhood Unit (Clarence Perry, 1929) – very similar to some of the concepts of the 15 minute city currently being promoted by the UN in its New Urban Agenda;
- The plug-in city (Peter Cook, 1960s) – modular with serious shades of Ready Play One's "stacks"
- Ekistics (KA Doxiadis, 1970) – a hierarchy of settlement sizes, each containing elements of the Natural, the Human, Community/Society, Protection/Shells and Networks.

(Doxiadis, 1970)
- The Mile High City (FL Wright) – the vertical city
- The Just City (P Marcuse) - dealing with all inhabitants justly and protecting the commons
- The New Urbanism - https://www.cnu.org/who-we-are/charter-new-urbanism

Source: Rethinking the Future (n.d.) and Mitchell (2003) and as referenced

In formulating a sociological approach to the city on of the fathers of Urbanism, Louis Wirth (1938) sees a city as being defined by three elements – its population size, density and homogeneity and urbanism as being expressed through three distinct but interconnected models:

- Physical structure – including the population, the technology of the city and its ecology;
- Social organisation – including social structure, social institutions and social relationships; and
- A set of attitudes and ideas, a "constellation of personalities" engaged in collective behaviour and operating within models of social control.

Four basic factors drive the location of cities are identified by Johnson (1971) as:

- Servicing a surrounding area/population (e.g. providing services to a rural community – a market town)
- Linking an area to the "outside world" either as a node/junction (e.g. a port), or as a "break-of-bulk" location on a through route.
- Accessing local resources (e.g. mining towns and early industrial cities)
- Whim (!)

Others have highlighted the importance of Christaller's Central Place theory (King, 1985) and Peterson's Public Choice Theory (Peterson, 1985).

Johnson (1972) also notes the useful differentiation between Basic (i.e. those providing goods and service for export from the settlement) and Non-Basic (i.e. those providing goods and services for the inhabitants of the settlement) occupations within settlements and how they interact and drive each other.

Brenner and Schmid (2015) in "*Towards a new epistemology of the urban?*" identify 7 provocative theses about urbanism, suggesting urbanism to be something far more fluid and multi-faceted than some earlier theories may suggest:

- Thesis 1: The urban and urbanization are theoretical categories, not empirical objects;
- Thesis 2: The urban is a process, not a universal form, settlement type or bounded unit;
- Thesis 3: Urbanization involves three mutually constitutive moments (pressures) — concentrated urbanization, extended urbanization and differential urbanization;
- Thesis 4: The fabric of urbanization is multidimensional (building on Lefebvre to give spatial, regulatory and social dimensions);
- Thesis 5: Urbanization has become planetary;
- Thesis 6: Urbanization unfolds through variegated patterns and pathways of uneven spatial development.
- Thesis 7: The urban is a collective project in which the potentials generated through urbanization are appropriated and contested.

The Global City

Whilst many cities can be thought of as international in terms of their participation in international trade and people and information flows, Sassen in *The Global City: New York, London, Tokyo* (Sassen, 2013) identifies the category of "global cities". These are cities (50 to 100 or so) which exist primarily as nodes of services and knowledge within a global network and economic system, effectively independent of their host-nation. She sees them as being defined by an emergent business form which emerged with the growth in ICT during the 1980s and a new "business internationalism". As to why these companies (which focus mainly on knowledge industries such as finance, law, consulting, technology) should chose to gather in these global cities rather than taken advantage of the dispersion which ICT could allow Sassen identifies 4 main forces (Sassen, 2019):

- It's just not about technology, but about the social linkages and the need to feed off of other peer companies and to outsource expertise through a network of capabilities to other (local) companies in a highly dynamic way;
- Each city has its own deep economic history, culture and specialisation which outsourcing and networking can leverage;
- As critical infrastructure increases in concentration these top-tier firms are better able to exploit it than other companies, or from a more dispersed location; and
- There are two different types of information needed by these businesses:
    - Type A – regular standardised information which is off-the-shelf and can be bought and used anywhere, and
    - Type B – Higher order information which needs interpretation, evaluation, inferencing and even well-informed guesswork to make sense of – and so needs the skills, experience and expertise of that local knowledge network again.

Sassen also notes (2019) that the idea of the one perfect global city is an illusion as organisations not only need entry points into different regions but the networked global cities allow them to take advantage of the cognitive and functional diversity that has naturally evolved across the world, and where different capabilities might naturally to better in some cities than others.

The "global city" concept could now be seen as something of a cliche (and certainly used more synonymously with international city) and some have seen it as an attempt by some to "focus study of geopolitics away from nation-states back towards dynamic city-states" (Sullivan & Elkus, 2016).

Sasssen's writings have also focussed on the issues of inequality that the behaviour of the companies dominating the global cities are creating within their cities (particularly by manipulating housing markets), and the issues of expulsion both internationally (migrants and refugees) and nationally (from city displacement) (e.g. Sassen, 2018).

The Dual City

Whilst cautioning against its more simplistic metaphorical use Castells' sees the Dual City concept as a useful way to examine the inequalities of the post-industrial cities, one where the two "cities" of the value-making and the devalued are "not separate and distinct, but rather deeply intertwined products of the same underlying processes (Mollenkopf & Castells, 1992). The emergence of the Information City with its potential polarisation between the value-making information workers and the devalued part-time, casual and gig economy workers who service them is a further manifestation of the form (Critchley, 2004).

City as a System or Metabolism

One way to view the city is that of a system or set of systems, akin to an animals metabolism (Wolman, 1965; Kennedy, 2007). At the most basic interpretation materials and consumables are brought into the city to build and maintain it and its population and then the wastes are removed. Such an analysis can readily be extended to include food, water, energy, building materials,

manufacturing and even the movement of people to service businesses and organisations and breathable air.

The Information and Virtual City

Whilst cities have always been dependent on the flow of goods, people and services, with the rise of the information age it may be that the flows of information within the "informational city" that are becoming the dominant element. Cities are becoming separated into the "space of places" (the physical world) and the "space of flow" (the cyber world) (Castells, 2020).

The introduction of modern electronics, particularly in the areas of communications and computing led to much discussion of the "death of distance" – although as Sassen notes above it is not purely technology that drives the locational needs of business and people. However, the increasing reliance on ICT for business and social interaction is changing the potential role and perception of the city. The replacement of physical structures on our lives by electronic ones is highlighted by Moore:

> *"Our own places, however, like our lives, are not bound up in one contiguous space. Our order is not made in one discrete inside neatly separated from a hostile outside … Our new places, that is, are given form with electronic, not visual,"* (Moore, 1967:34-35)

And Mitchell (2003) not only reflects this and the way that digital communications have resulted in the "death of distance" alongside a globalisation in our relationships, but also highlights the challenge it brings to defence:

> *"our habitats…are no longer bounded by wall, but by the reach of our networks. They are occupied by spatially dispersed organizations, ranging from multi-national corporations and retail chains to terrorist networks. They are controlled and defended not at a continuous perimeter, but at separated and scattered access nodes. They are given order and meaning not by participation in strict spatial sequences and hierarchies, but by their global linkages." (Mitchell, 2003:16)*

If cities are so dependent on their networks then it is these that must be defended, not city walls, and they must be defended out to a distance as well as locally, and there must be redundancy and circuit breakers (Mitchell, 2003). Mitchell also notes how such networks can help with recovery as well as resilience, whilst warning that cities must:

> *"… find effective ways to guard against introduction of explosives, toxins, bioagents, portable code, and other destructive agents, and to guard against hijacking of vehicles, servers and similar delivery devices. And cities must content with both threats of physical destruction and threat to the logical integrity of networks from viruses, worms, software attack tools and the like."* (Mitchell, 2003: 187)

City as Organism

Extending the City as System/City as Metabolism idea even further some view the city as an organism (Strappa, 2016). Poëte (1938) is described as:

> *"proposing the city as an 'organism in itself', made up of cells (individuals, then families) which act together as a whole, a 'functional unity' ….. It develops partly through biological necessity – in order to survive, it takes sustenance from its environment, and propagates itself – but because it is an intelligent organism, capable of reflection……"* (Periton, 2018)

Poëte's city is *"a constantly changing, consciously self-organising organism"* (Periton, 2016).

Webb (2007) in reviewing research that shows that "the bigger the city, the faster life is; but the rate at which life gets faster must itself accelerate to maintain the city as a going concern" (Bettencourt, 2007) notes that this is completely different to biological organisms, where

> *"Larger organisms have greater economies of scale, and slower-paced lives. Metabolic rates, for example, increase with (body mass) 0.75. With the city, it seems, mankind has created an organism operating beyond the bounds of what is natural."* (Webb, 2007)

Others move from analogy to process, looking to research in areas such as bio-design, bio-engineering and bio-materials to effectively 'grow' cities which are part of a broader ecology and where *"bio-integrated cities must involve other organisms and respond across different scales to co-create sustainable ecologies with nature."* (Gattupalli, 2022).

Mitchell in *Me++: The Cyborg Self and the Networked City* (Mitchell, 2003) views the 'city as organism' from a more cyborgian perspective, viewing the city as an extension of the body and talks about the body/city metaphors has having "*turned concrete and literal*". He draws parallels between the body and the city in terms of flows, senses, gaze (surveillance), control, mind, memory and the spatially extended cyborg of the individual, writing that

> *"My biological body meshes with the city; the city itself has become not only the domain of my networked cognitive system, but also – and crucially – the spatial and material embodiment of that system."* (Mitchell, 2003:19)

Non-Western Perspectives

In considering cities we must beware of using Western models and terms to try and make sense of cities from non-Western cultures where different histories, factors, priorities and norms are likely to be at play (Hill, 2000).

To add to!

The Future of Urbanism

The dominant trend in contemporary urbanist thought is probably "The New Urbanism" (https://www.cnu.org/who-we-are/charter-new-urbanism) which aims to counter the

> *"disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage"*

through the

> *"restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy."*

A related pragmatic, practical and grass-roots approach to the future is "Tactical urbanism" which

> *"abandons all holistic and comprehensive planning as either failed in its historical record or doomed by the worldwide ascent of neo-liberal economy and politics. It is, however, an elastic movement in that it applies to a spectrum of designers, from those who perform guerrilla intervention of short-term change, often equivalent to the illegal settlements that are at the birth of many urban favelas, to those who seek to prod, provoke, or stimulate the political process toward incremental realization of fragments of what might be larger networks."* (Gadanho et al.,2014:12)

This has also been referred to as "bottom-up urbanism (Bloch, n.d.).

Kotkin (2016) in "*The Human City: Urbanism for the Rest of Us*" calls on urban planners to recognise that the big city has failed, and instead look to guide development into smaller cities and more suburban and peri-urban/extra-urban developments to develop and "urban pluralism" which supports both those who want city-centre living and those who want a less metropolitan lifestyle.

So What?

Some of the fundamental ideas about urbanism (such as Wirth's trinity of physical structure, social organisation and attitudes and ideas) can have immediate relevance to how the military should understand and approach cities. Ideas such as the Global City and the Dual City give us lenses through which we can examine the external connectivity and internal dynamics of urban environments, and so get a better idea of what may happen if we begin to interact with their existing modes. This idea of how the city operates is then explored further in the concepts of the city as network, metabolism, and organism – all highlighting that interacting with a city is a non-linear activity – complexity and unpredictability rules. That the city is no longer just people and structure but is overlayed by an information layer is also highlighted and so should make us more aware of the CEMA and Influence implications. That much of this is through a Western lens must act as a word of caution, and how whether non-Western cities will adopt the tenets of New Urbanism (although that certainly seems to be pushed by the UN) and other more modern and "just" models is a key question, and what implications these may have on the future cities that we may have to fight over in the coming decades is key.

Megacities (1000)

A topic of much discussion in civilian and military circles since the mid-2010s has been "megacities" – these are defined as cities with over 10 million inhabitants (UNDESA, 2018).

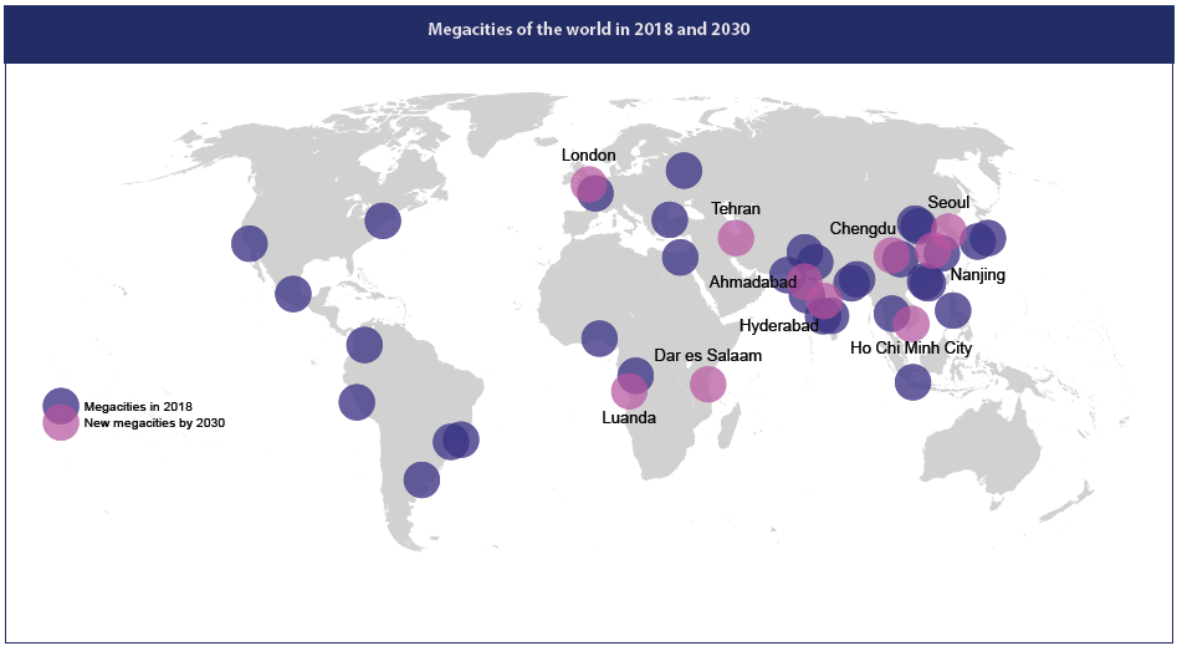
Russell Glenn, a RAND consultant who wrote much on urban warfare during the 2010s, warns though that:

> "*many if not all observations made regarding megacities … apply to the larger of world cities with somewhat smaller populations is a given. Westerners liking for multiples of five and 10 should not causes to limit insights to the serendipitous choice of the 10 million mark*". *(*Glenn, 2016*).*

This seems to be echoed by the UN who wrote in their 2022 Envisaging the Future of Cities report that "*The message emerging from these dynamics is that infrastructure investments and urban planning interventions should not be biased towards megacities. Instead, governments must pay attention to small and secondary cities*" (UN HABITAT, 2022), and which uses a 5 million rather than 10 million threshold for its data analysis. They also note that "*Despite the large number of megacities (18 if Japan is included and 16 if excluded), 54 per cent of Asia's urban population live in cities of less than 1 million people, while 16 per cent reside in megacities. This fact is a clear indication that the agenda for the future of cities in the region should in part focus on the key issues relating to secondary cities, in addition to those of megacities*." (UN HABITAT, 2022:14)

According to the 2018 UN World Cities report "*In 2018, 48 cities had populations between 5 and 10 million. By 2030, 10 of these are projected to become megacities. Projections indicate that 28 additional cities will cross the 5 million mark between 2018 and 2030"* (UN DESA, 2018) – giving a net increase to 66 of these secondary cities, to be added to 43 megacities – over 100 very large cities. The UN also states that *"A minority of people reside in megacities—529 million, representing 6.9 per cent of the world's population in 2018. Yet, as these cities increase in both size and number, they will become home to a growing share of the population. In 2030, a projected 752 million people will live in cities with at least 10 million inhabitants, representing 8.8 per cent of the global population."* (UN DESA, 2018)

Map 1 shows the location of Megacities in 2018, and those predicted for 2030 and Table 1 lists existing and predicted Megacities for 1950, 2018 (datum), 2025 (est) and 2035 (est) – sorted by 2035 population.



Source: UN Department for Economic and Social Affairs (DESA) World Cities in 2018 Data Booklet (UNDESA, 2018:5)

Map 1: Global Megacities in 2018 and 2030

City	Country	1950	2018	2025	2035
		Million	Million	Million	Million
Delhi	India	1.4	29	35	43
Tokyo	Japan	11.3	37	37	36
Shanghai	China	4.3	26	30	34
Dhaka	Bangladesh	0.3	20	25	31
Al-Qahirah (Cairo)	Egypt	2.5	20	23	29
Mumbai (Bombay)	India	3.1	20	22	27
Kinshasa	DR Congo	0.2	13	18	27
Ciudad de México	Mexico	3.4	22	23	25
Beijing	China	1.7	20	23	25
São Paulo	Brazil	2.3	22	23	24
Lagos	Nigeria	0.3	13	17	24
Karachi	Pakistan	1.1	15	18	23
New York-Newark	USA	12.3	19	19	21
Chongqing	China	1.6	15	18	21
Kolkata (Calcutta)	India	4.6	15	16	20
Lahore	Pakistan	0.8	12	15	19
Manila	Philippines	1.5	13	15	19
Kinki M.M.A. (Osaka)	Japan	7.0	19	19	18
Bangalore	India	0.7	11	14	18
Istanbul	Turkey	1.0	15	16	18
Buenos Aires	Argentina	5.2	15	16	17
Guangzhou, Guangdong	China	1.0	13	15	17
Tianjin	China	2.5	13	15	16
Chennai (Madras)	India	1.5	10	12	15
Shenzhen	China	0.0	12	14	15
Rio de Janeiro	Brazil	3.0	13	14	15
Luanda	Angola	0.1	8	10	14
Hyderabad	India	1.1	9	11	14
Los Angeles Conurbation	USA	4.0	12	13	14
Jakarta	Indonesia	1.5	11	12	14
Dar es Salaam	Tanzania	0.1	6	9	13
Lima	Peru	1.1	10	12	13
Moskva (Moscow)	Russia	5.4	12	13	13
Bogotá	Colombia	0.6	11	12	13
Krung Thep (Bangkok)	Thailand	1.4	10	11	13
Thành Pho Ho Chí Minh	Viet Nam	1.2	8	10	12
Paris	France	6.3	11	11	12
Nanjing, Jiangsu	China	1.0	8	10	12
Ahmadabad	India	0.9	8	9	11
Chengdu	China	0.6	9	10	11
Surat	India	0.2	7	9	11
Baghdad	Iraq	0.6	7	8	11
Tehran	Iran	1.0	9	10	11
London	United Kingdom	8.4	9	10	11
Kuala Lumpur	Malaysia	0.3	8	9	10
Xi'an, Shaanxi	China	0.6	7	9	10
Seoul	S. Korea	1.0	10	10	10
Wuhan	China	1.1	8	9	10

Source: WUP2018 F22-Cities_Over_300K_Annual Dataset

Table 1: Global Megacities in 1950, 2018 (datum), 2025 (est) and 2035 (est) – sorted by 2035 population

Notable points are:

- Only 2 cities counted as Megacities in 1950 (New York and Tokyo)
- In 1950, 15 of the 48 cities had populations of under 1 million, and 1 of under 100,000 (Shenzhen)
- By 2035 10 of the 48 megacities are in China and 8 are in India. No other country has more than 2 cities on the list.
- In 2035, only 8 megacities are in the southern hemisphere
- In 2035, 27 of the 48 megacities are in littoral locations, rising to 30 if significantly riverine locations close to the coast are included.

In much of the literature on Megacities there is a danger of seeing them as homogenous environments. However, they are also likely to include mega-slums (Ward, 2016), megaburbs (Russell, 2011) and richer mega-politan (Sullivan & Elkus, 2011) regions, each of which brings its own unique challenges.

In terms of the potential for conflict and crisis Gadanho (2014) warns:

".. large cities around the world are also hotbeds of conceivable catastrophe. Within a gradually globalised order, megacities, megalopolises, and other large urban networks are crucial nodes for the flow of information and people. Accordingly, they also contain the potential to rapidly propagate any crisis or collapse to the whole system. As large cities can no longer be seen as isolated, self-sufficient entities, their current and oncoming problems mat be anticipated to bear massive impact at a global level."

However, against this Kilcullen (Spencer, 2019) recognises Megacities as one of the things he called wrong in Out of the Mountains (Kilcullen, 2015) and that the worst issues of the last half-decade have come from the fastest growing cities, not necessarily the largest.

Hendrex (quoted in Spencer, 2020) identifies the presence of Seoul on the megacity list as a prime reason for (US) military interest in the topic of megacities. Whilst there are 14 chapters alone (out of 49) in Blood and Concrete (2019) whose title includes the word "megacity" almost all of the analysis seems just as relevant to any other very large city. As Otto & Besik (2016) warn, echoing Glenn above, "*It is important to recognise 10 million offers no additional value other than a fictitious threshold*". As such this PhD will tend to downplay the concept of the "megacity", but recognise that as the population, area, density and connectedness of an urban environment increases then the challenges that it presents, to both its civilian management and military operations, will likely increase, probably in a non-linear way and potentially in some qualitative rather than quantitative aspect. The military implications of Megacities and other "very big cities" will be further considered in Chapter 4.

So What?

Don't get hung up on definitions. Very big cities have issues, but there is a complex interplay between context, culture, population, area, density and connectedness that will generate issues of varying types for cities at varying sizes as they get larger.

Fragile, Vulnerable and Resilient Cities

The OECD defines fragility as *"the combination of exposure to risk and insufficient coping capacity of the state, systems and/or communities to manage, absorb or mitigate those risks. Fragility can lead to negative outcomes including violence, poverty, inequality, displacement, and environmental and political degradation."* (OECD, 2020).

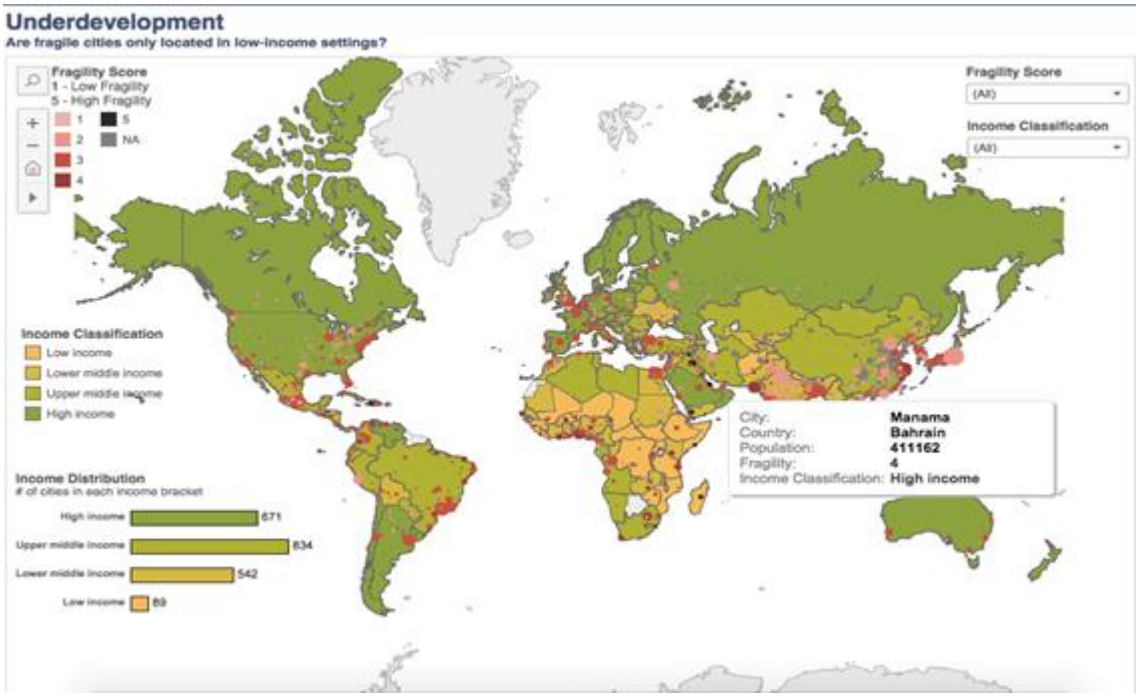
Independent non-profit news organisation The New Humanitarian (https://www.thenewhumanitarian.org/) maintains an annual Fragile States Index (FSI). This rates a country's "fragility" based on 12 political, social, and economic indicators, examining challenges in *"inequality, displacement, security, public services, and external intervention"* (The New Humanitarian, 2021). Their "Fragile 15" are shown in Table 2 and the full list is available at https://www.thenewhumanitarian.org/feature/2021/5/27/2021-fragile-states-index-upheavals-in-a-time-of-covid.

Category	Countries
The 5 Most Fragile	Yemen Somalia Syria South Sudan The Democratic Republic of Congo
The Ups and Downs: 5 of the most worsened or improved states	United States (most worsened) Ethiopia (getting worse) Lebanon (getting worse) Peru (getting worse) Kenya (improved)
Fragility and ongoing crises: 5 states to watch	Venezuela Central African Republic Haiti Iraq Afghanistan

Source: https://www.thenewhumanitarian.org/feature/2021/5/27/2021-fragile-states-index-upheavals-in-a-time-of-covid.

Table 2: The "Fragile 15" - 2021

Muggah (2014) provides a useful introduction to the concept of fragile *cities*, and Muggah (2016) presents a visual analysis of them, the definition of "fragile" being based on "*ten indicators that are statistically associated with instability"*. Map 2 plots the location of the most fragile cities against the level of development of their host country.



Source: Muggah (2016)

Map 2: Fragile Cities and Underdevelopment

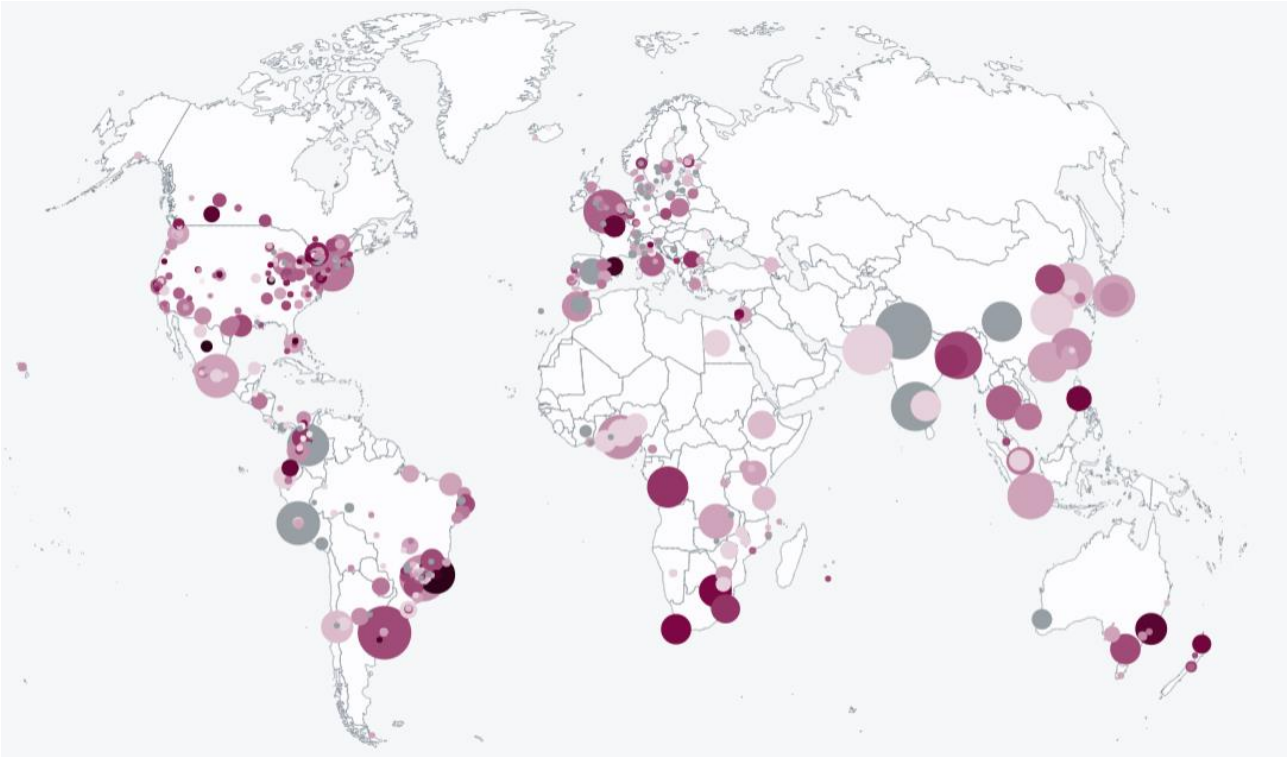
In an updated report Muggah (2017) identified the 15 most fragile cities as (no particular order):

- Kunduz, Afghanistan
- Kabul, Afghanistan
- Goma, Congo
- Bunia, Congo
- Baaqoobah, Iraq
- Mosul, Iraq
- Mogadishu, Somalia
- Kismaayo, Somalia
- Merca, Somalia
- Ibb, Yemen
- Ta'lzz, Yemen
- Aden, Yemen
- Al-Mukalla, Yemen
- Sana'A, Yemen

The 3D interactive graphics dashboard which accompanied the report is at http://fragilecities.igarape.org.br/.

Selby (2019) provides a useful conceptual framework for fragile cities, relating causal triggers and failures to resultant fractures and fragilities.

“Vulnerability” seems to be applied more to cities at environmental risk. Not-for-profit analysts CDP (CDP, 2018) reported on the vulnerability of over 620 global cities, with results mapped in Map 3.



Source: CDP, 2018 – interactive version at https://www.cdp.net/en/research/global-reports/cities-at-risk

Map 3: City Vulnerability

Risk analysts Verisk Maplecroft (Nichols, 2021) in a survey of 576 cities found that 99 of the world’s 100 environmentally riskiest cities were in Asia, with 37 in China and 43 in India. Their findings are summarised in Figure 1.

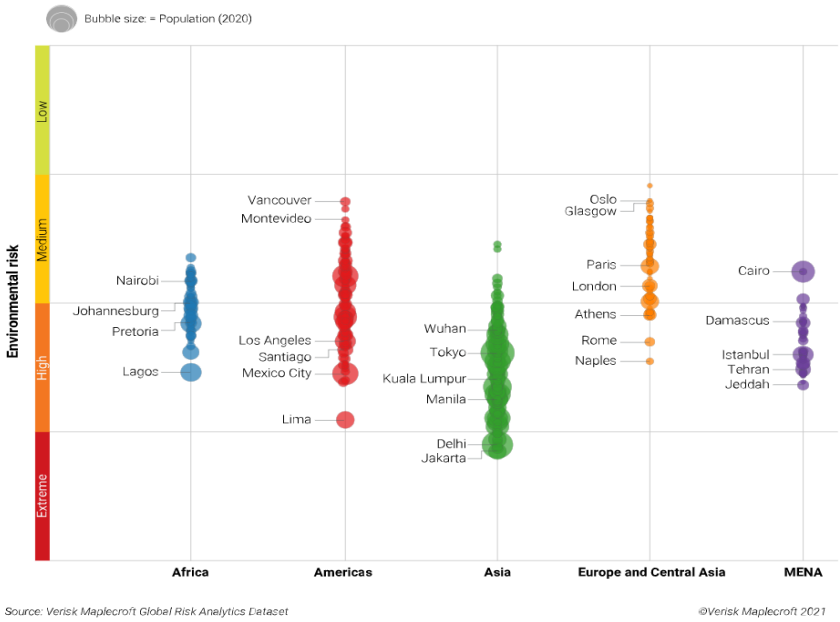


Figure 1: Global City Environmental Vulnerability

Looking at the challenge in the opposite direction the Rockefeller Foundation and Arup maintain a City Resilience Index (https://www.arup.com/projects/city-resilience-index) although this is more concerned with providing cities with a measure of their own resilience and a framework to identify improvements.

The UN also promotes an Urban Recovery Framework (URF) to help urban areas better respond to crises and to enhance their resilience (UNHABITAT, 2022:19). Its approach, based on the concept of a context, conflict and Housing/Land Property analysis and urban baseline information is highly relevant to any humanitarian operation, as are its principles shown in Box 2.

Box 2: Key Principles of Urban Recovery Frameworks

Principle 1: Do No Harm - Reduce operational and reputational risks by utilizing a conflict sensitivity analysis, and social and environmental safeguards, considering immediate and longer-term impacts.

Principle 2: Building Back Better (BBB) - Urban recovery and reconstruction interventions shall consider potential improvements to reconstructing what was been lost, including options to adapt to climate change and mainstreaming resilience in all interventions.

Principle 3: Geographic and social equity in programming - Urban recovery, supported by urban spatial analysis, must ensure geographic and social equity in programming, both within and across cities.

Principle 4: Municipal and community empowerment - Urban recovery interventions shall be coordinated through local governance and representation bodies such that no competing urban management structures on the city level will be created.

Principle 5: Prioritize vulnerable groups, women and youths - Urban recovery interventions must prioritize vulnerable groups, women and youth in programming and consultation. Urban recovery frameworks strive for equity in assistance among others by acknowledging the shared, and often equal, vulnerabilities of host populations and displaced.

Principle 6: Human rights and protection - Urban recovery programming shall conduct due diligence to consider human rights, protection and social cohesion implications in advance of programming.

Principle 7: City as systems - Urban recovery planning shall consider cities as systems, review interventions against sectoral interdependencies and weigh potential multiplier effects of city level interventions and due consideration to linkages between neighbourhoods as well urban-rural linkages, and on their long-term transformative potential.

Source: UNHABITAT, 2022:19

Feral Cities

Whilst accepting it as something which may never exist Norton (2003) describes “feral cities” as cities with *“a population of more than a million people in a state the government of which has lost the ability to maintain the rule of law within the city’s boundaries yet remains a functioning actor in the greater international system”.* He describes health and social services as being all but non-existent, disease and pollution as rife, as spreading physically out of control, and control being operated at local levels by criminal gangs, clans and armed resistance groups.

In order to give warning of cities “going feral” Norton presented a Red-Amber-Green (RAG) warning system, as shown in Table 3 and later updated (Norton, 2010) to include Civil Society. The

RAG is based on three levels of analysis (individual, state, systemic).

THE HEALTH OF CITIES

	Government	Economy	Services	Security
Healthy ("Green")	Enacts effective legislation, directs resources, controls events in all portions of the city all the time. Not corrupt.	Robust. Significant foreign investment. Provides goods and services. Possesses stable and adequate tax base.	Complete range of services, including educational and cultural, available to all city residents.	Well regulated by professional, ethical police forces. Quick response to wide spectrum of requirements.
Marginal ("Yellow")	Exercises only "patchwork" or "diurnal" control. Highly corrupt.	Limited/no foreign investment. Subsidized or decaying industries and growing deficits.	Can manage minimal level of public health, hospital access, potable water, trash disposal.	Little regard for legality/human rights. Police often matched/stymied by criminal "peers."
Going Feral ("Red")	At best has negotiated zones of control; at worst does not exist.	Either local subsistence industries or industry based on illegal commerce.	Intermittent to nonexistent power and water. Those who can afford to will privately contract.	Nonexistent. Security is attained through private means or paying protection.

Source: Norton, 2003

Table 3: Norton's original Red-Amber-Green warning system for potential Feral Cities

This was expanded by Bunker and Sullivan (2011) to include two more levels – Purple for an actual feral city with a vacuum of government, and Black for a beyond-Feral, criminal city. Sullivan (2016) draws parallels between the narco-cities and favela of Latin America and the feral city concept.

Whilst no list of cities ranked by their "feral" index appears to be in the public domain, Norton and Spencer in discussion (Spencer, 2021) identify Mogadishu, Los Angeles, Durban, Johannesburg, Port-au-Prince, Lagos, Toledo, Tjiuana, Mexico City, Caracas, Sana'a and even other US cities such as St Louis, New Orleans, Baltimore and Detroit as being in the somewhere other than Green on the feral spectrum. Norton also points out in the same interview that conflict can turn a city into a feral city, as well as the feral nature of the city being an obvious driver for humanitarian operations within it.

So What?

Understanding which countries and cities might be potentially feral, fragile or vulnerable can help in identifying where Civil and Humanitarian Assistance tasks might come from and give some idea of local support or challenge when undertaking such operations. "Feral" cities seem to have more coverage in the military literature than fragile or vulnerable ones, perhaps because of the more implied risk of armed conflict with the local inhabitants or power-brokers. Resilience models can help indicate how well a city might "bounce-back" and where aid might be best directed/managed to increase resilience and stability. Again military implications of feral/fragile/vulnerable cities on urban conflict will be considered in Chapter 4.

Smart Cities

The UN's World Cities Report 2022 (UNHABITAT, 2022:xxix) states that:

> *"There is a rapid growth in the demand for smart city technology: The demand for smart city systems and solutions is estimated to increase annually by 25 per cent, with an overall market value of approximately US$517 billion. This is driven by governments investing in technology to meet the demands of an urbanizing world. This also based on rapid advancements in digital and connected technologies and their ubiquity in everyday life" (p.xxix)*

Rhee (Spencer, 2020b) describes smart cities as being about using smart technology, such as Internet of Things and Artificial Intelligence/Machine Learning in order to improve the quality of life – a focus on people that is sometimes lost in the "city management" perception and maturity models (e.g. The Scottish Government, 2014) of smart cities. Hollands (2008) provides a useful analysis of some of the rhetoric of smart cities.

Rhee identifies 4 layers in a smart city:

- Level 3 – Human and Services - where decisions are made and actions determined;
- Level 2 – Data Analytics – generating actionable information;
- Level 1 – Communications Networks – wired and wireless;
- Level 0 – Physical Systems – sensors and actuators.

The International Telecommunications Union's "Smart Sustainable Cities Maturity Model" seems more output focussed than other models and identifies the areas of life that the smart city may impact as shown in Box 3.

Box 3: ITU-T Sustainable Smart Cities Dimensions

- **Economic** - how Sustainable Smart Cities (SSCs) help to boost the local economy and improve employment for the livelihood of the citizens. Economic dimension may include, but are not limited to, the following topics:
    - ICT infrastructure;
    - Innovation;
    - Employment;
    - Trade (e-Commerce and export/import);
    - Productivity;
    - Physical infrastructure (water supply, electricity, health infrastructure, transport, road infrastructure, buildings and urban planning and public space);
    - Public sector.
- **Environmental** - how SSCs help to protect the existing as well as the future quality and reproducibility of natural resources. Environmental dimension may include, but are not limited to, the following topics:
    - Air quality;
    - Water and sanitation;
    - Noise;
    - Environmental quality;
    - Biodiversity;
    - Energy.
- **Social** - how SSCs help to ensure the welfare (safety, health, education, etc.) of the

citizens and how related services can be equitably delivered despite differences such as background, race or gender. Social dimension may include, but are not limited to, the following topics:

- Education;
- Health;
- Safety (disaster relief, emergency, public safety and ICT);
- Housing;
- Culture;
- Social inclusion.

Source: ITU-T, 2019:4

The UN HABITAT World Cities Report (UN HABITAT, 2022:145) places the Smart City concept in alongside the Sustainable Cities and Resilient Cities concepts – with the optimal overlap of all three described as the Green Urban Future.

So What?

Smart Cities are not an “all or nothing” manifestation. As the plethora of Smart City maturity Models suggests there are a lot of different components and dimensions and they will all be progressing at different rates and almost every modern city probably has some progress on some smart city dimensions.

Whilst the military implications of smart cities will be discussed further in Chapter 4 there is an obvious alignment between the smart city and the needs of the Intelligence Preparation of the Operating Environment and Cyber & Influence operations. As Spencer notes (Spencer, 2020b) any Smart City’s control centre should be a key objective or ally, but should be well protected.

Drivers for Urban Management and Governance

UN publications offer a variety of models for urban management and governance drivers focussed on different perspectives and situations. They can provide a useful insight into how an urban settlement works, and how understanding can be enhanced by identifying what to look for, and what it might be called, and what the related flows and interdependencies may be.

SDG Integration	**Urban Recovery Framework**	**Guidance For Responding To Displacement In Urban Areas**
Urban Governance/Legal Framework	Urban Governance	Policy, Legislation and Governance
Capacity Building		
Data-driven processes and management		Data for an Evidence-Based Response
Environmental Resilience	Environment	
Spatial Planning		
Social Inclusion		
Financial Strategies		Finance
	Community Engagement	
	Economy	Urban Economy
	Heritage	
	Infrastructure and Services	Urban Basic Services
	Housing	Housing
		Social and Recreational Facilities
UN-HABITAT, 2022b:25	*UN-HABITAT, 2022:19.*	*UN-HABITAT, 2020:20*

Table 4: Comparison of Selected UN Urban Driver Models

So What?

Understanding the civil terms for things, and what there plans might cover, can help in building a shared mental model between military and civilian staffs (both national and NGO), before, during and after operations.

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Note: References are for the whole chapter and so cover more than just what is in this First Bite.

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