

THE EVOLUTION OF URBAN SPACES

FROM CITY TO METAPOLIS AND MEGAREGIONS

PhD Program in Civil Engineering, Territorial Engineering/Spatial Planning and Architecture

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The evolution of large urban spaces: from metropolis to megaregion

- Until the middle of the 19th century the city was compact and many of them were surrounded by walls. Although there were already suburbs outside walls, they were initially peasant residences but later on also summer resorts, manor-houses and farmhouses.
- With the development of industrialization and motorized means of transportation, particularly road transport in the post-World War II period, the city expands and spreads, and metropolis (population over 1 million) and conurbations begin to develop: fusion of old towns and cities by filling in their interstitial spaces. (Definition by Patrick Geddes in his 1915 book "Cities in Evolution").



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- With economic and financial globalization (deregulation of capital flows, global trade and industrial relocation), some cities took the role of global centers of services and innovation, becoming hubs of integration in the world market. This concentration of services was possible by the enormous development of ICT. They are the so-called global cities/metropolis of the 1980's/90's (Saskia Sassen; 2000):
 - Highly concentrated command points in the organization of the world economy;
 - Strategic locations for financial and service major international companies;
 - specialized service companies, which have replaced industry as leading economic sectors;
 - Locations of production of innovations (notably in ICT and decision models) needed in financial globalization;
 - Markets for financial products and innovations.



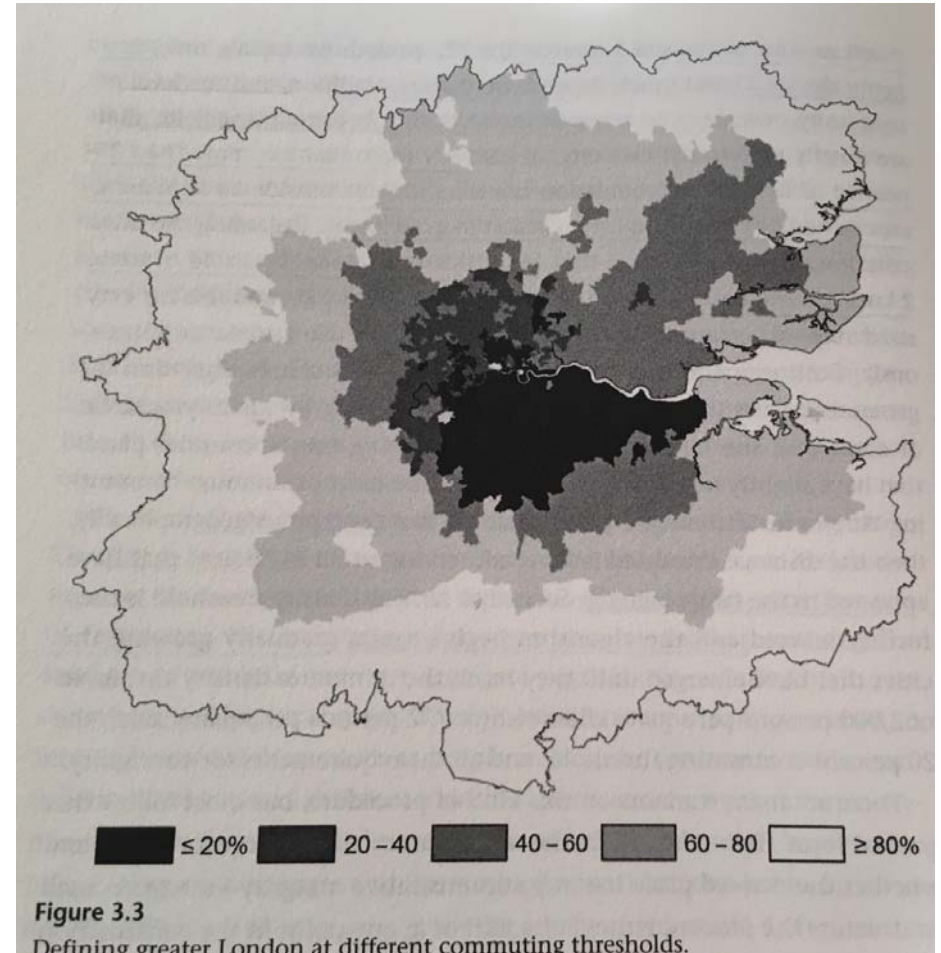
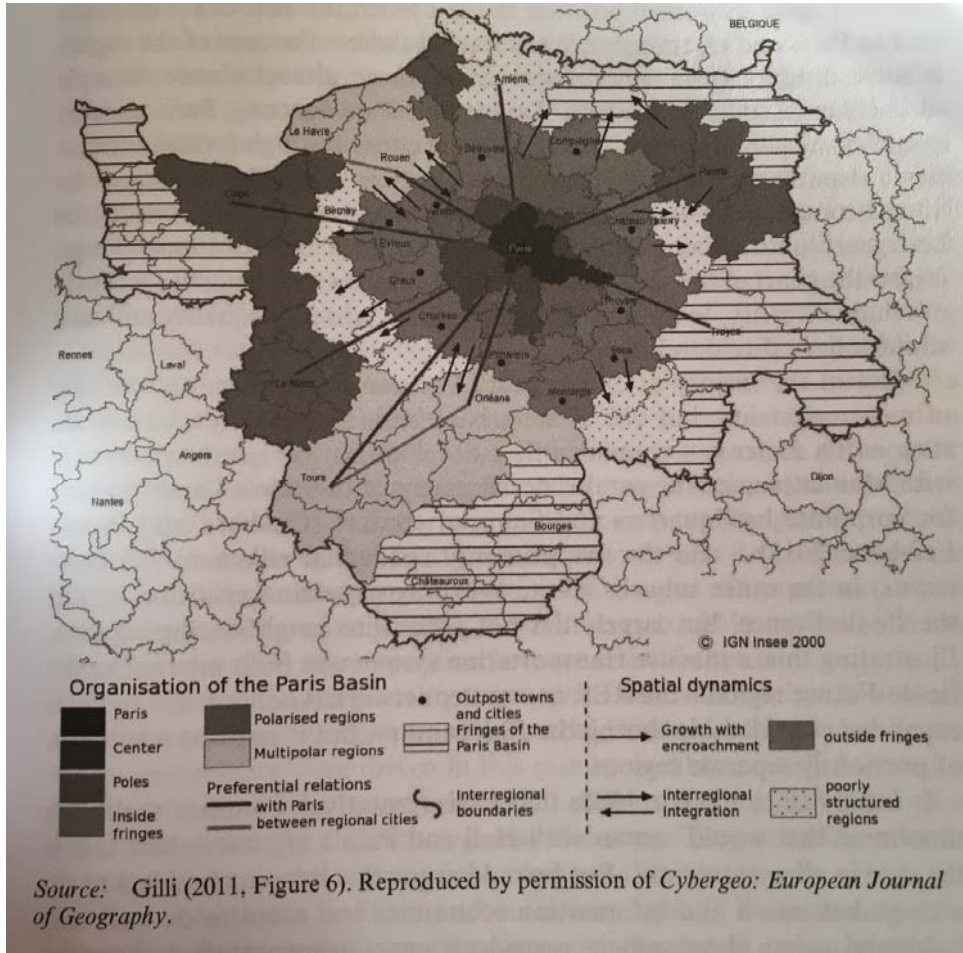
- The continuous urbanization of the population, the centripetal effects of globalization, the greater attractiveness of the metropolis and the development of transportation and communication modes, gave rise to the megalopolis. A phenomenon of population concentration in urban spaces with some continuity and high functional interdependence, initially identified by P. Geddes in 1915, and that has its greatest development in the late twentieth century, all over the more urbanized world and integrated assets in the global economy.
- The greater articulation (planned, fostered or resulting from the very functioning of markets) between metropolis and large cities has allowed the development of megaregions (the new urban space of the 21st century?), as characterized by John Harrison and Michael Hoyler in their book "Megaregions. Globalization's New Urban Form?" (2015).



Table 3.1 A built-environment-theoretical periodization of US urbanization

Period	Approximate dates	Transportation and communication technology	Internal relations	External relations
Industrial urbanization	1850–1940	Railroads, streetcars, steel ships	<i>Cities</i> : differentiated between industry and residence	Cities and agricultural hinterlands
Metropolitan urbanization	1940–1980	Highways	<i>Metropolitan areas</i> : comprising central city and extended suburbs	National interstate highway system
Regional urbanization	1980–present	Information technology and logistics	<i>Megaregions</i> : not functionally integrated	Globalization, but also megaregions

Source: Author





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MEGALOPOLIS OR THE URBANIZATION OF THE NORTHEASTERN SEABOARD

Jean Gottmann

Dr. Gottmann, Professor at the School of Political Science, University of Paris, is on leave to direct for The Twentieth Century Fund a research project, "A Study of Megalopolis." He is also a member of the Institute for Advanced Study, Princeton, N. J.

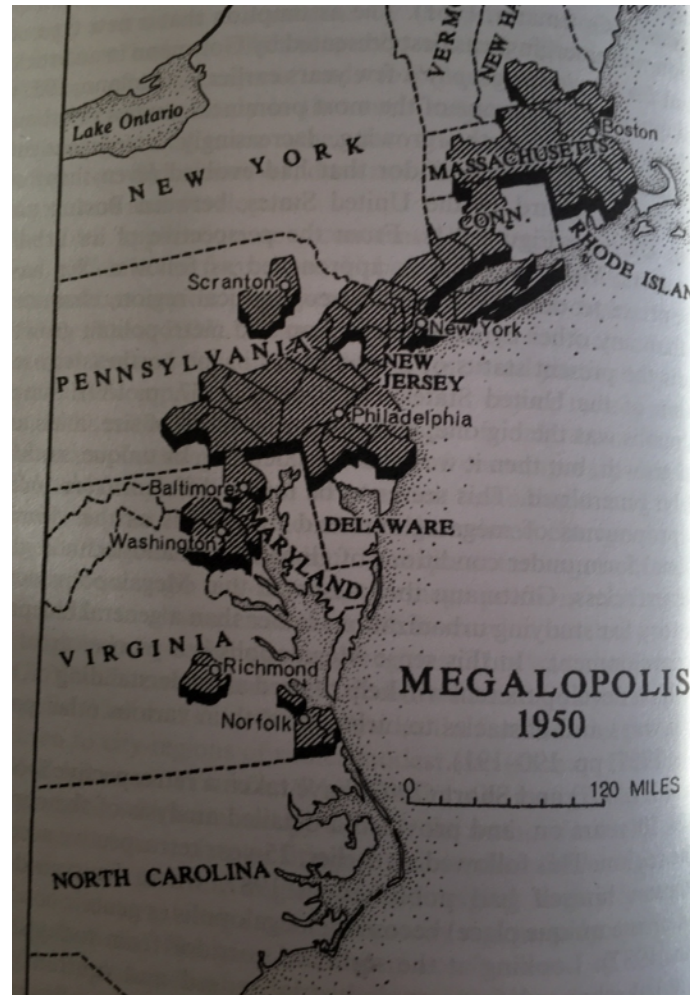
THE frequency of large urban units scattered along the Atlantic seaboard in the northeastern United States was a striking realization to the foreigner who first visited the area, even 15 years ago. In February, 1942, after a first trip from New York to Washington, the writer, being asked by Isaiah Bowman in Baltimore what was the most striking impression he had had as a geographer in his first months in this country, answered: "The density of great cities along this coast, from Boston to Washington."

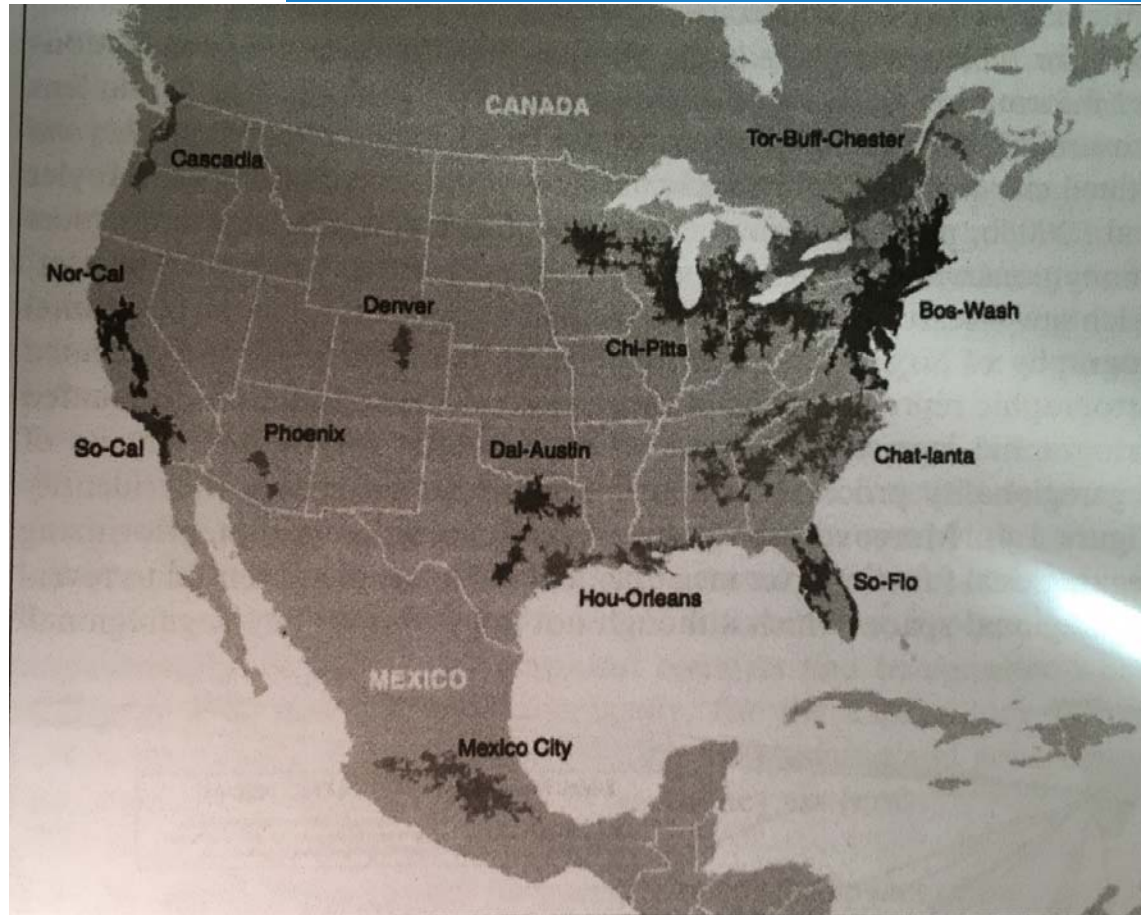
In 1950, on the basis of the new census, the Bureau of the Census prepared a map, later published as an illustration to a booklet of statistics on *State Economic Areas*, which showed clearly the continuity of an area of "metropolitan" economy from a little north of Boston to a little south of Washington, more precisely from Hillsborough County in New Hampshire to Fairfax County in Virginia. This seemed to be a first statistical demonstration on the map of the existence of a continuous stretch of urban and suburban areas, the main NE-SW axis of which was about 600

miles long, and within the frame of which dwelt even in 1950 some 30 million people.

In the geography of the distribution of habitat this was a phenomenon unique by its size not only in America but in the world. It resulted obviously from the coalescence, recently achieved, of a chain of metropolitan areas, each of which grew around a substantial urban nucleus. The super-metropolitan character of this vast area, the greatest such growth ever observed, called for a special name. We chose the word *Megalopolis*,¹ of Greek origin, and listed

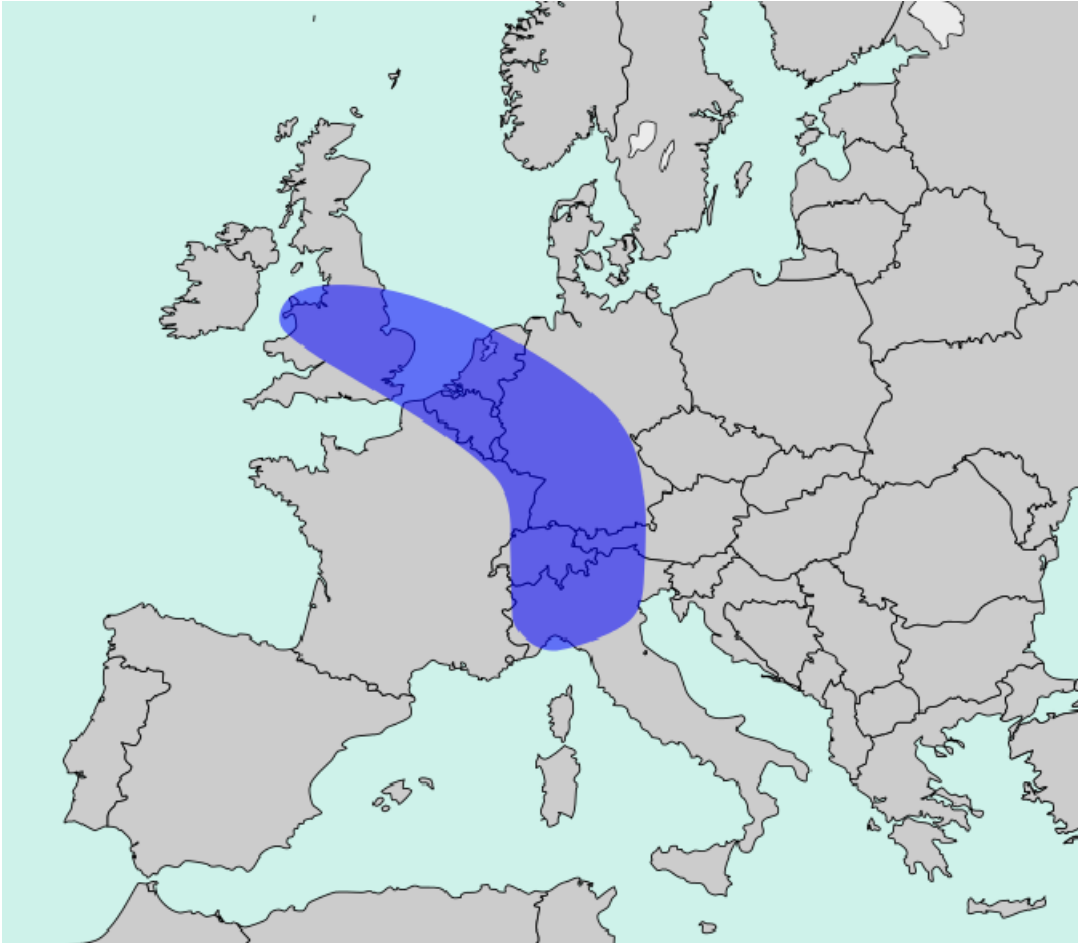
¹ The term *Megalopolis* was preferred to others after careful consideration of various possibilities. We wish to express our appreciation for the help received in this matter from several distinguished classicists at the Institute for Advanced Study, especially from Professors Harold Cherniss, Benjamin Merritt, and the late Jacob Hammer. "Megalopolis" was used by various authors in connection with quite different meanings: ancient philosophers described sometimes by it the "world of ideas"; recently Lewis Mumford used it to describe the whole trend towards large cities. We have felt it appropriate to describe a unique geographical region, characterized more than any other by enormous urban and metropolitan growth, and to assess the present status of a vast region in the northeastern seaboard section of the United States. Our statistical definition as on the maps is based on the map accompanying the Bureau of the Census publication: *State Economic Areas* by Donald J. Bogue, Washington, 1951.





Megaregions in USA

Source: Florida et al. (2008, p. 470). Reproduced by permission of RightsLink/Oxford University Press.



United Kingdom:

Bradford, Liverpool, Manchester, Leeds, Sheffield,
Nottingham, Birmingham, London

Belgium: Brussels, Antwerp

Netherlands: Amsterdam,
Rotterdam, The Hague, Utrecht

Luxembourg: Luxembourg

Germany: Rhine-Ruhr, Frankfurt
, Munich, Stuttgart, Nuremberg

France: Strasbourg, Lille

Switzerland: Zürich, Basel

Italy: Turin, Milan, Genoa

130 millions inhabitants



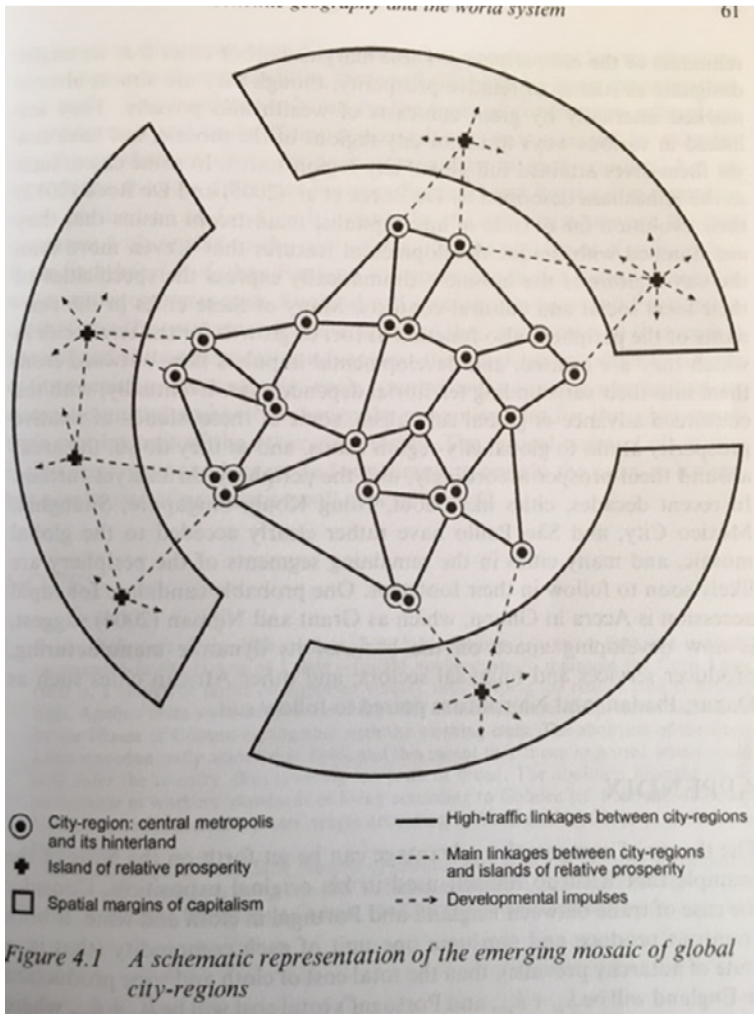
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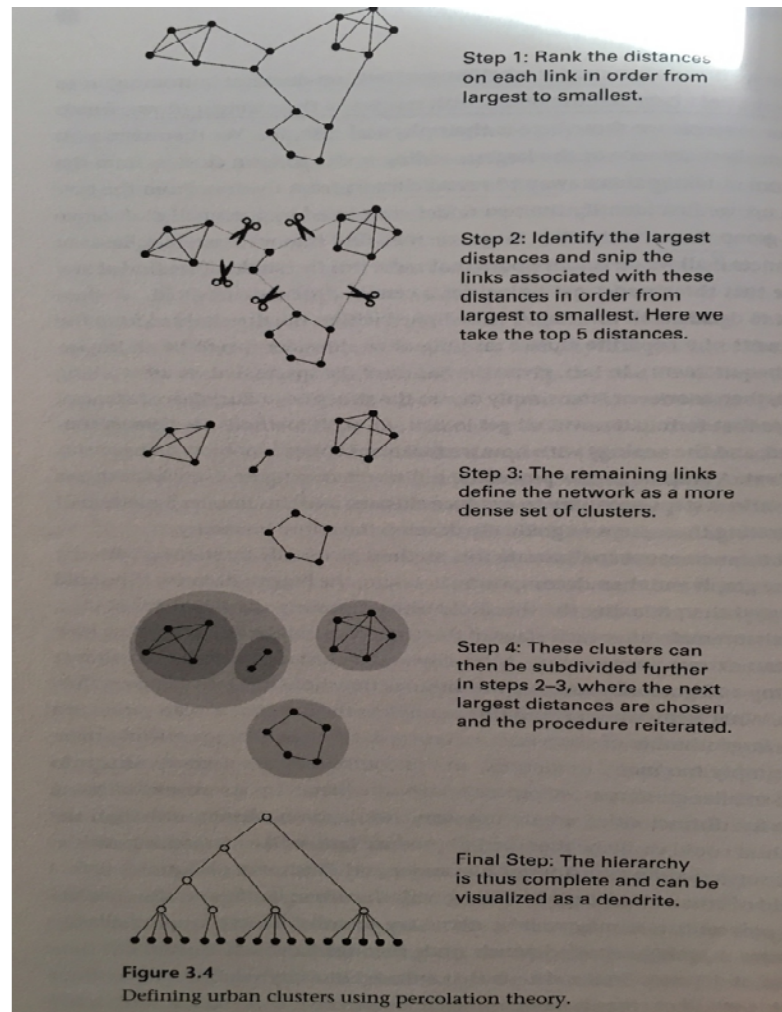
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Table 4.1 Three megaregions through the lens of historical urbanization and power politics

Megaregion	Type	Megaregional timeframe	Internal power dynamics	Source of challenges
Paris	Monocentric	Recent	Highly imbalanced	Primarily internal. Global power is only mildly threatened; holds political power over its own destiny. Major inequality issues are internal to old region, but megaregionality is putting pressures on infrastructure, and sprawl is now a concern.
Northern England	Polycentric	Deeply historic	Balanced, but with rivalries and emerging gaps	More external than internal. Functions as a hybrid with major economic pressures from monolithic London, limited control over political destiny. New high-speed rail could create new questions of suburban links with London. Deep internal rivalries and long struggles with post-industrial economics.
Northern California	Hybrid (polycentric core, but functionally monocentric)	Mixed	Imbalanced, hyper fragmented	Primarily internal, with key exceptions. Economic core is amongst the most powerful in history, but operates in a hyper-fragmented political landscape. Limited intervention from higher levels of government to encourage megaregional scale planning interventions.



THE GLOBAL CITY-REGION: SCHEME OF ARTICULATIONS AND INTERDEPENDENCIES BETWEEN CITIES, METROPOLIS AND THE SURROUNDING SPACE.





THE THREE TYPES OF REGIONAL URBAN SPATIAL CONFIGURATIONS RELATED TO THE GLOBAL ECONOMY

- **Global city-regions, megacities/megalopolis and metropolitan regions** - functioning as a single urban system, albeit involving one or more cities (identified in the northeastern USA, Western Europe and OECD countries).
- **Megaregions** - comprise one or several urban systems (global scale; between 20 and 120 million inhabitants).
- **Planetary urbanization** - represents the global urban system across geographic space (US and global scale). These are "networks of metropolitan centers and surrounding spaces, spatially and functionally linked." ("Megaregions ...")



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“ The world’s 40 largest mega-regions ... cover only a tiny fraction of the habitable surface of the earth and are home to less than 18% of the world’s population; yet, they are responsible for 66% of global economic activity and about 85% of technological and scientific innovation.”

Source: *Florida, R., T. Gulden and C. Mellander (2008), “The rise of the mega-region”, Cambridge Journal of Regions, Economy and Society, 1 (3), pg. 474.*



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Table 1.1 From megalopolis to megaregions (and beyond)

Concept	Definition	Minimum population	Maximum population	Geography	Number	Foundational literature
Megalopolis	'[V]ery large polynuclear urbanized systems endowed with enough continuity and internal interconnections for them to be considered a system in itself.' (Gottmann, 1976, p. 162)	25 million	Not specified	Northeastern United States	1	Gottmann (1961)
Global city-region	'[D]ense polarized masses of capital, labour, and social life that are bound up in intricate ways in intensifying and far-flung extra-national relationships. As such, they represent an outgrowth of large metropolitan areas – or contiguous sets of metropolitan areas – together with surrounding hinterlands of variable extent which may themselves be sites of scattered urban settlements.' (Scott, 2001a, p. 814)	1 million	27.9 million	Global	>300	Scott (2001a, 2001b)
Mega-city region	'[A] series of anything between 10 and 50 cities and towns, physically separate but functionally networked, clustered around one or more larger central cities, and drawing enormous economic strength from a new functional division of labour.' (Hall and Pain, 2006, p. 3)	1.6 million	19 million	Western Europe	8	Hall and Pain (2006)
Metro (politan) regions	'[L]arge concentrations of population and economic activity that constitute functional economic areas, typically covering a number of local government	1.5 million	34 million	OECD	78	OECD (2006)



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	areas. An economic area in this sense denotes a geographic space within which a number of economic links are concentrated.' (OECD, 2006, p. 31)					
Megaregions	'[I]ntegrated sets of cities and their surrounding suburban hinterlands across which labour and capital can be reallocated at very low cost . . . perform[ing] functions that are somewhat similar to those of the great cities of the past . . . but they do this on a far larger scale.' (Florida et al., 2008, pp. 459-460)	3.7 million	121.6 million ¹	Global	40	Florida et al. (2008)
		20 million	120 million	Global	Not specified	UN-Habitat (2010a, 2010b)
	'[N]etworks of metropolitan centers and their surrounding areas . . . spatially and functionally linked through environmental, economic, and infrastructure interactions.' (Ross, 2009, p. 1)	5 million	54 million	United States	11	Ross (2009)
Planetary urbanization	'[E]ven spaces that lie well beyond the traditional city cores and suburban peripheries – from transoceanic shipping lanes . . . [to] erstwhile "natural" spaces such as the world's oceans, deserts, jungles, mountain ranges, tundra, and atmosphere – have become integral parts of the worldwide urban fabric.' (Brenner and Schmid, 2011, p. 13)	n/a	7 billion +	Global	1	Brenner (2013a, 2013b); Brenner and Schmid (2011)

Note: 1. The largest megaregion of 121.6 million is Pearl River Delta. It is worth noting that back in 2009 it was reported that plans were afoot to expand the region politically so the population of the Pearl River Delta would reach 260 million (Forbes, 2011).

Source: Authors



Definition of city

It is difficult to establish a universal criterion for the definition of a city.

In most countries, three conditions are considered for an urban agglomeration to be considered a city: a continuous building space with a population of no less than 5 thousand inhabitants (10 thousand for UN urban population statistics purposes); the existence of a diversified set of specialized functions and services (e.g. in Portuguese legislation this aspect is well defined); important social interactions and a sense of belonging/identity.

(“Dictionnaire de l'urbanisme et de l'aménagement”. Coord. Pierre Merlin and Françoise Choay. Ed. PUF, Paris, 1988).



Definition of city (cont.)

"Cities are places where people come together to share them for greater prosperity and involvement in many social activities that enrich their lives. social activities that enrich their lives. They are places where the critical mass generated by the density of experiences, as well as of social interactions, which increases more than proportionally as the number of people in contact with each other, generate innovation and guide the progress of civilization."

("Inventing Future Cities". Michael Batty. MIT Press, 2018).



Three key criteria for delimiting a city:

1. Population density (minimum of 14 people/ha).
2. Level of interaction or dependency (measure of the strength of connections existing between individuals or groups of people in a given geographical space; e.g., a threshold of 20% of the working population moving to a given moving to a given center - in the OECD it is 15%).
3. Geographic proximity or contiguity (e.g. all urban spaces that are less than 2 km apart are part of the same city).

(“Inventing Future Cities”. Michael Batty. MIT Press, 2018).



The *polis* is the place where a certain people, specific as far as traditions and customs, has its seat, resides, where it has its own *ethos*.

In Latin there is no term corresponding to the Greek polis.

The Latin term *civitas* has its origin in *cives*, which is a group of people who have come together to give life to the city. A *civitas* is that which is produced by the gathering of several people under the same laws, beyond any ethnic or religious specificity.

(“The city”. Massimo Cacciari. Ed. GG, Barcelona, 2010).



In Greek civilization, the city is fundamentally the unit of people of the same **genos** (race, relatives, people with common background). "In Rome, on the contrary, since its origins, the city is a confluence, a convergence of people who are very different in terms of religion, ethnicity, etc., and who agree among themselves only by virtue of the law." The idea of citizenship (belonging to a given city) has no roots of an ethno-religious nature. "What governs **civitas** is not an original foundation, but an objective: we live together because, through the concord produced by our laws, we can pursue a common aim to a common future."

("The city". Massimo Cacciari. Ed. GG, Barcelona, 2010).



Stages of evolution of cities:

(According to Lewis Mumford in "The Culture of Cities", Ed. Harcourt, NY, 1938).

- ***Eopolis (village)***
- ***Polis (city)***
- ***Metropolis (capital city)***
- ***Megalopolis (oversized city; latest stage of development)***
- ***Tyrannopolis (extreme expansion of urban space, causing rapid decline)***
- ***Nekropolis (city abandoned due to war or famine)***

Belief that the expansion of the city became unsustainable when it reached the size of a megalopolis (population over 25 million).