

Peripheria Final Conference
Human Smart Cities from vision to practice
Rome 29/30 May 2013
In cooperation with Forum PA

What planning for smart cities?

Alessandro Balducci



Department of Architecture and Urban Studies
Politecnico di Milano

Summary

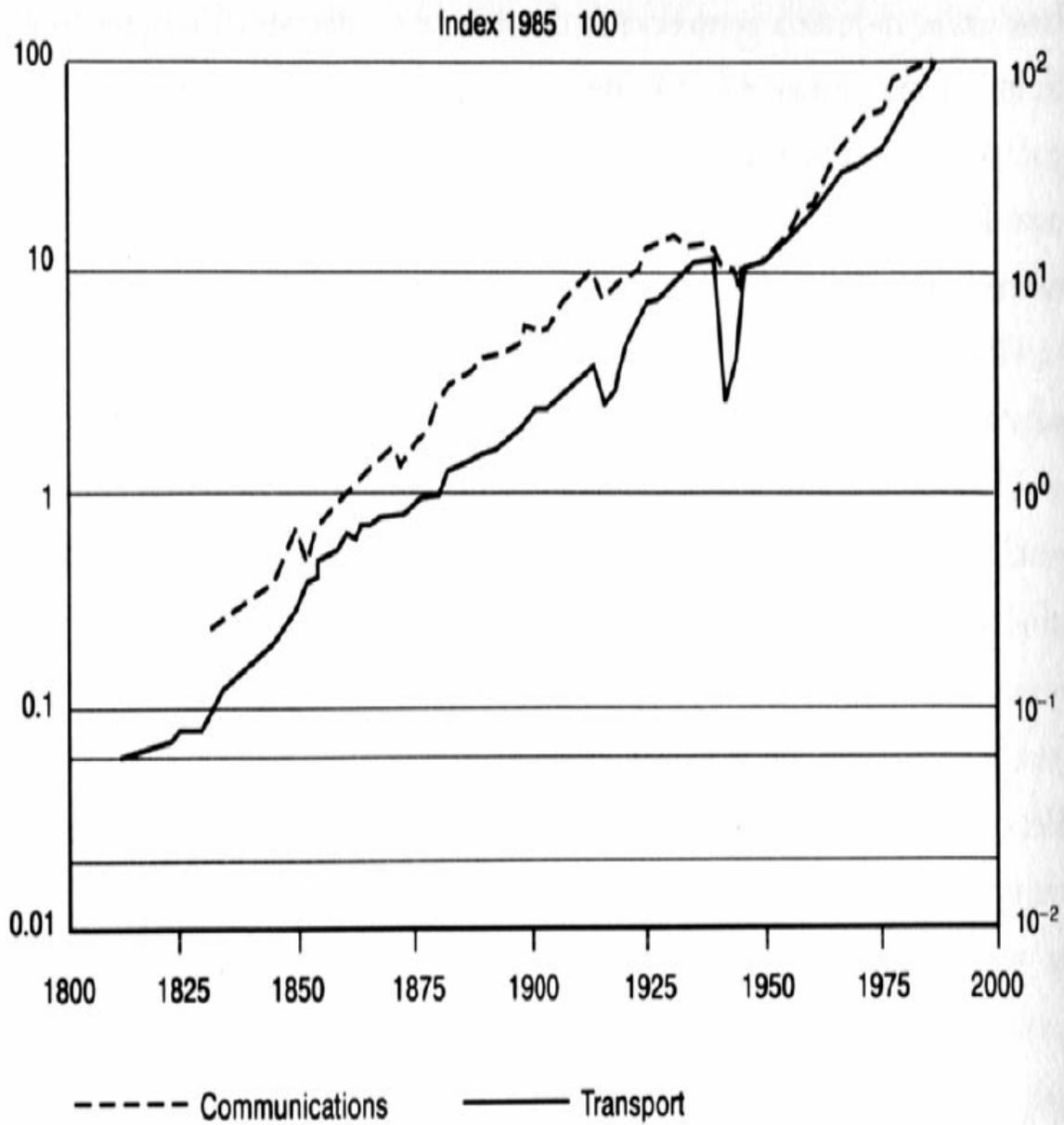
1. The urban age
 - The urbanisation process
2. Looking at History
3. What cities, how have they changed
 - The mega city region concept
4. Determinants of change
 - Movement
 - Fragmentation
 - New networks
5. What planning for smart cities?

1. The urban age

Urban population >50% of world population in 2008 (3% in 1800, 14% in 1900, 30% in 1950)

the world is not flat, free distance communication goes with increase in mobility, concentration, and the need of face to face communication

telecoms substitute for personal movement but also encourage it

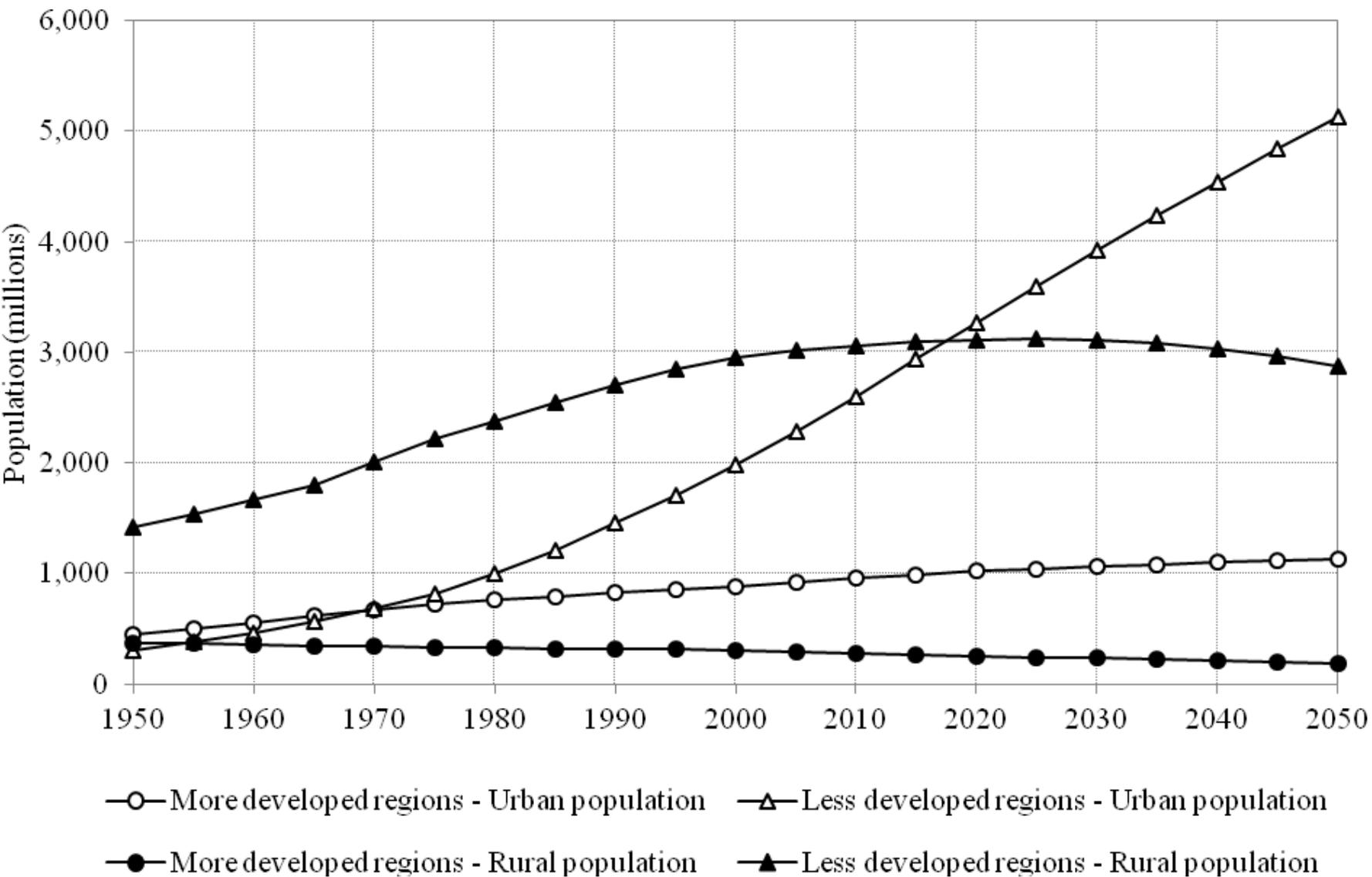


--- Communications — Transport

Figure 6.2 Growth of passenger transport and communications in France

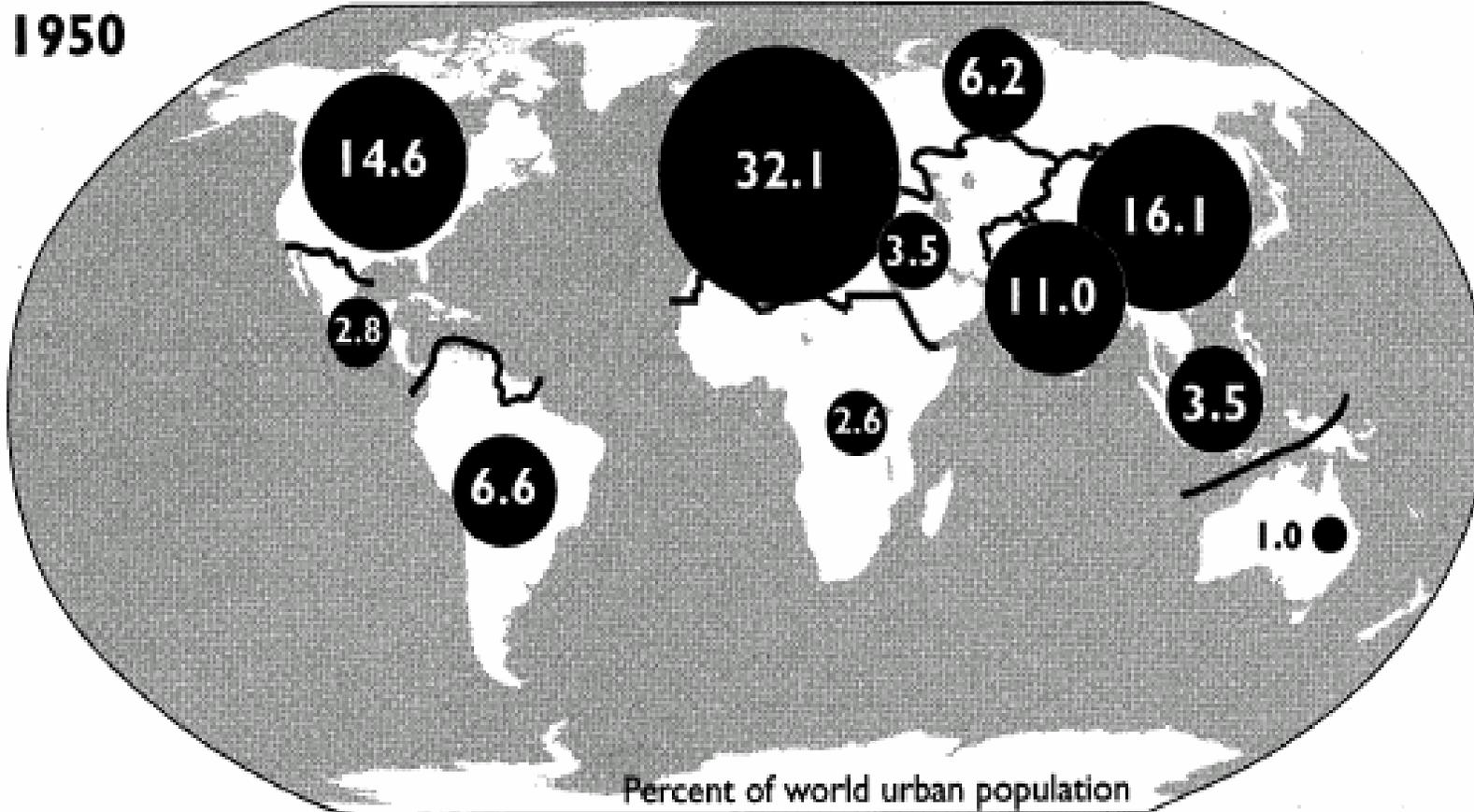
Graham and Marvin (1996)
Telecommunications and the City

Figure I. Urban and rural populations by development group, 1950-2050



- the world population is expected to be 70 per cent urban in 2050. Between 2007 and 2050, the population living in urban areas is projected to gain 3.1 billion, passing from 3.3 billion in 2007 to 6.4 billion 2050.
- by mid century the world urban population will likely be the same size as the world's total population in 2004.
- We reached 7,000.000.000 people in 2012, we added 1 billion in the last 12 years, to reach the first billion it took until 1804

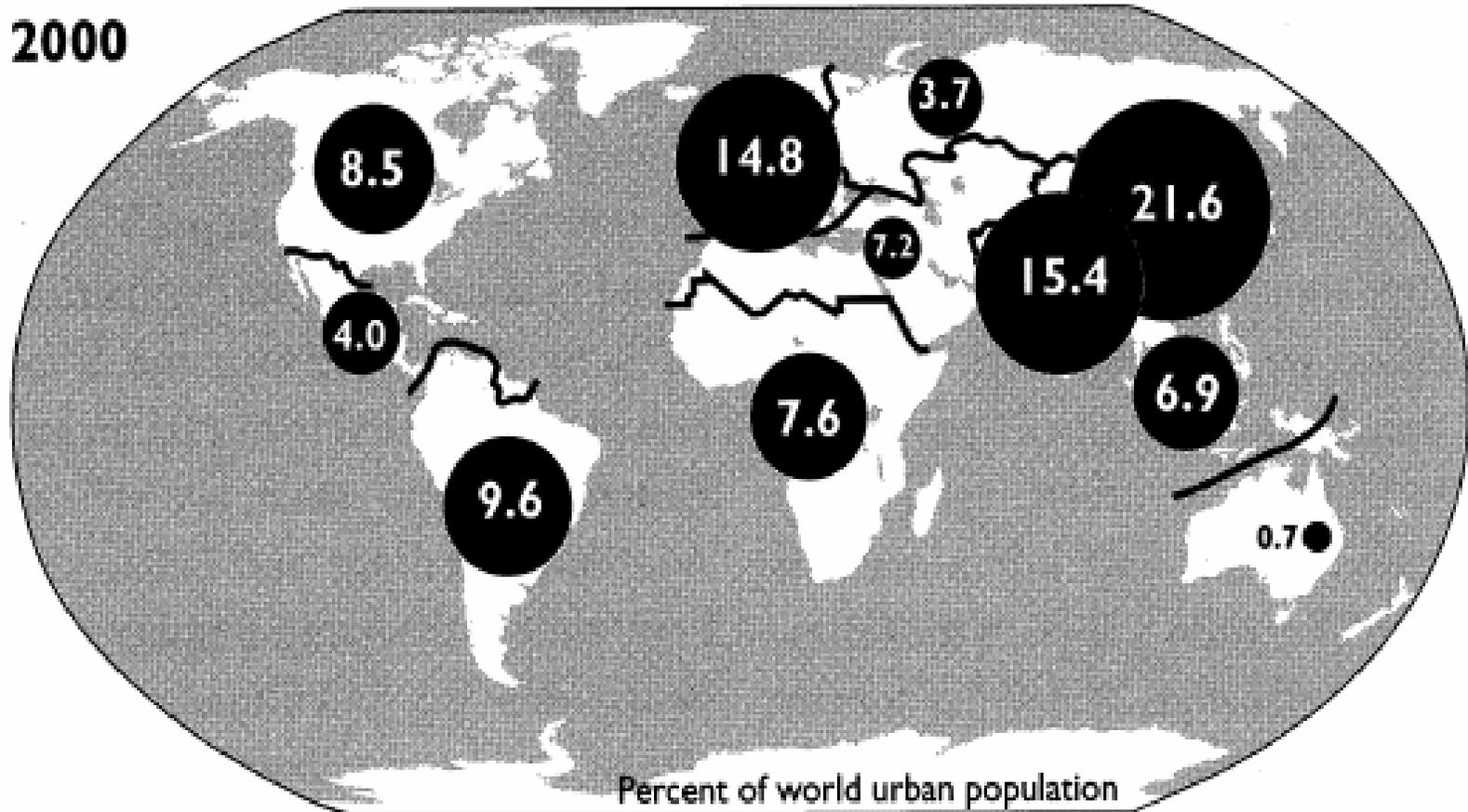
World urban population (%): 1950



Source: Data from United Nations, World Urbanization Prospects, 2001 Revision (New York: United Nations Population Division, 2002), www.unpopulation.org. Brunn et al (2003).

World urban population (%): 2000

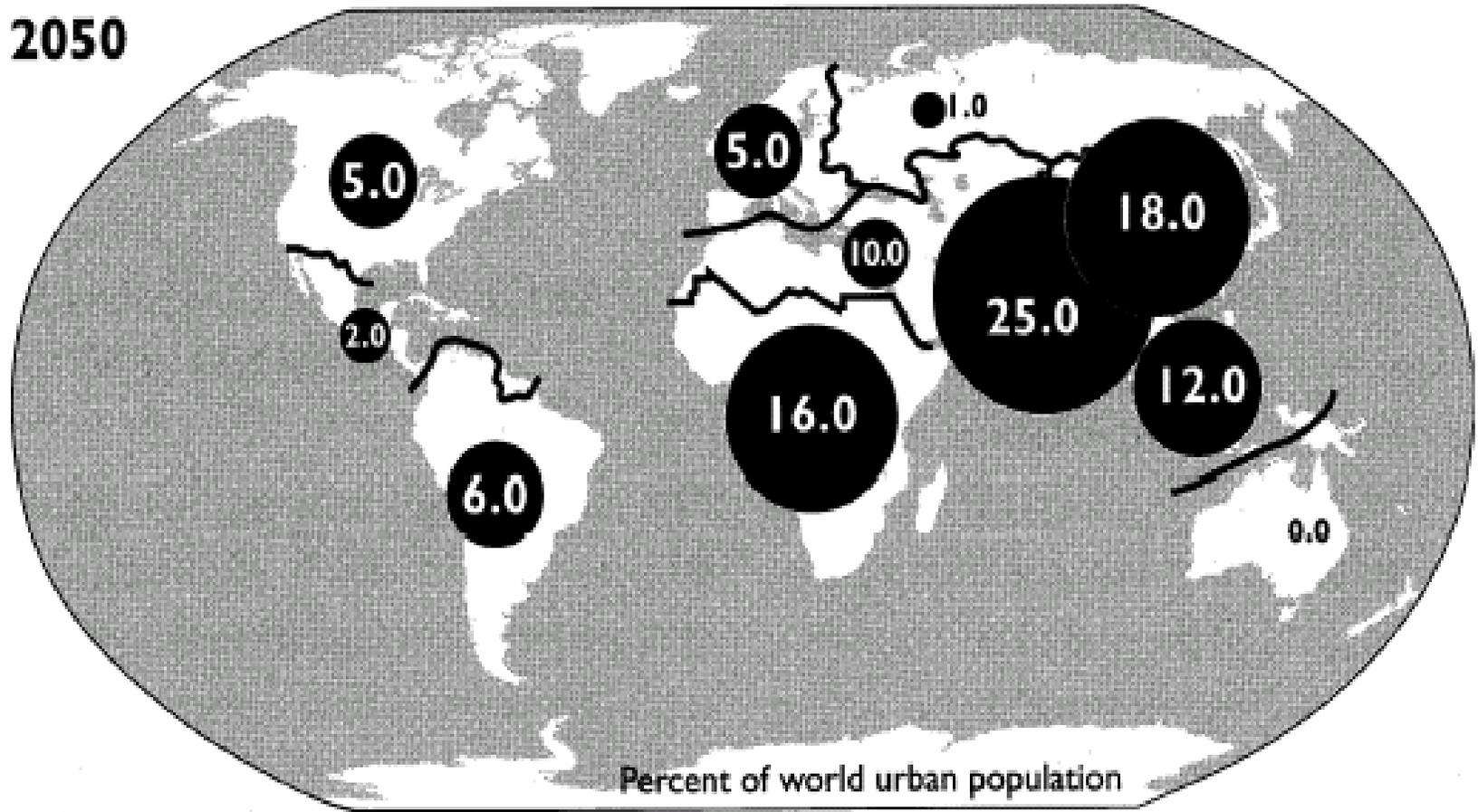
2000



Source: Data from United Nations, World Urbanization Prospects, 2001 Revision (New York: United Nations Population Division, 2002), www.unpopulation.org. Brunn et al (2003).

World urban population (%): 2050

2050



Source: Data from United Nations, World Urbanization Prospects, 2001 Revision (New York: United Nations Population Division, 2002), www.unpopulation.org. Brunn et al (2003).

Very different phenomena of urbanization

- United states: acceleration of sprawl phenomena
- In the global south: concentration of population in cities to escape rural poverty
- In China and India we assist to the formation of vast and dense urban regions
- In Europe : central poles, dispersed urbanisation and the combination of two phenomena
- But there are also shrinking cities in the Rust Belt of the US, in former East Europe (East Germany, Poland, etc.)

3. Looking at history

Peter Hall in his book “Cities in Civilisation” in 1998 analyses the role of cities in supporting the progress of human kind

The point is that cities have always been at the center of innovation processes but the **sources of innovation have been different** and the cities which have been at the forefront have been diverse

Four waves of innovation:

1. Cultural-Intellectual

2. Technological-Productive

3. Cultural-Technological

(+1 relates to the other three)

4. Technological-Organizational

(“Urban Innovation”)

Four waves of innovation:

1. Cultural-Intellectual:

Athens 500BC, Florence 1400, London 1600, Vienna 1800, Paris 1900, Berlin 1920

Central capitals, excess of wealth, art and trade, magnet of talent, role of outsiders

2. Technological-Productive:

Manchester 1770, Glasgow 1840, Detroit 1900, Palo Alto 1950

Second rank cities, inventors in innovative environment, technology and science

Four waves of innovation:

3. Cultural-Technological

Los Angeles 1920; Memphis, Tennessee 1955

Distant cities in developing areas

Cultural production and mass distribution

Where Technology meets art

4. Technological-Organizational

(“Urban Innovation”) relates to all the three previous waves, based on Internet, multi-media revolution, access to the network, technology and design.

Urban innovation

Which cities are at the forefront of the new wave of urban innovation?

Cambridge Mass and Boston, Lille and the Delta Metropolis, Shanghai and Chongming Island, Copenhagen and the Oresund City, Sao Paulo and its vibrant region.

The source of innovation is still the character of the urban: **to function as *milieu* where joint presence creates an abundance of current and potential exchanges**, where research, art, finance, high education, technical capacity, benefit from clustering

But this time **joint presence is not only due to proximity** but also to **distance relations supported by new technologies** which allow an open access to new communities

The challenge is to understand if the new wave of urban innovation can contribute to solve the problem that the urban space is experiencing:

congestion, pollution, environmental crisis, land consumption, energy waste, security, habitability of the outer space

3. What Cities ?

The contemporary city is a different phenomenon from the city of the 20th century.

It has changed its form and structure.

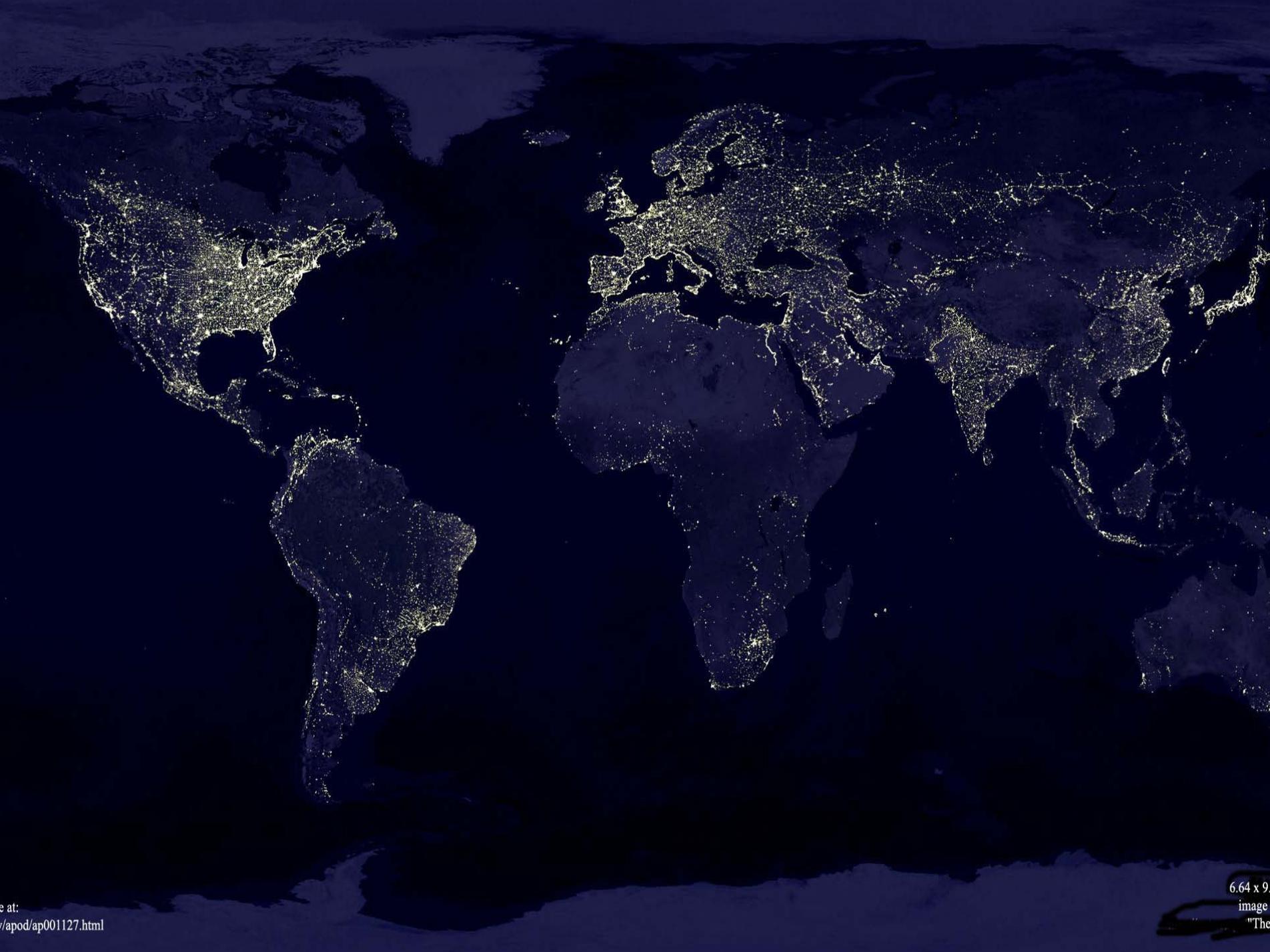
Until quite recently cities could be described as compact urban structures, developed around centers, containing the main public buildings, which along spokes led to the periphery and then across the countryside to other centers.

Today a stratum of urbanisation has stretched over the ancient framework of towns and cities

The *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 labor. These places exist both as separate entities, in which most residents work locally and most workers are local residents, and as a parts of a wider functional urban region connected by flows of people and information carried along motorways, high-speed rail lines and telecommunications cables..”

(Hall, Pain 2006: 3)



Mega-City-Regions

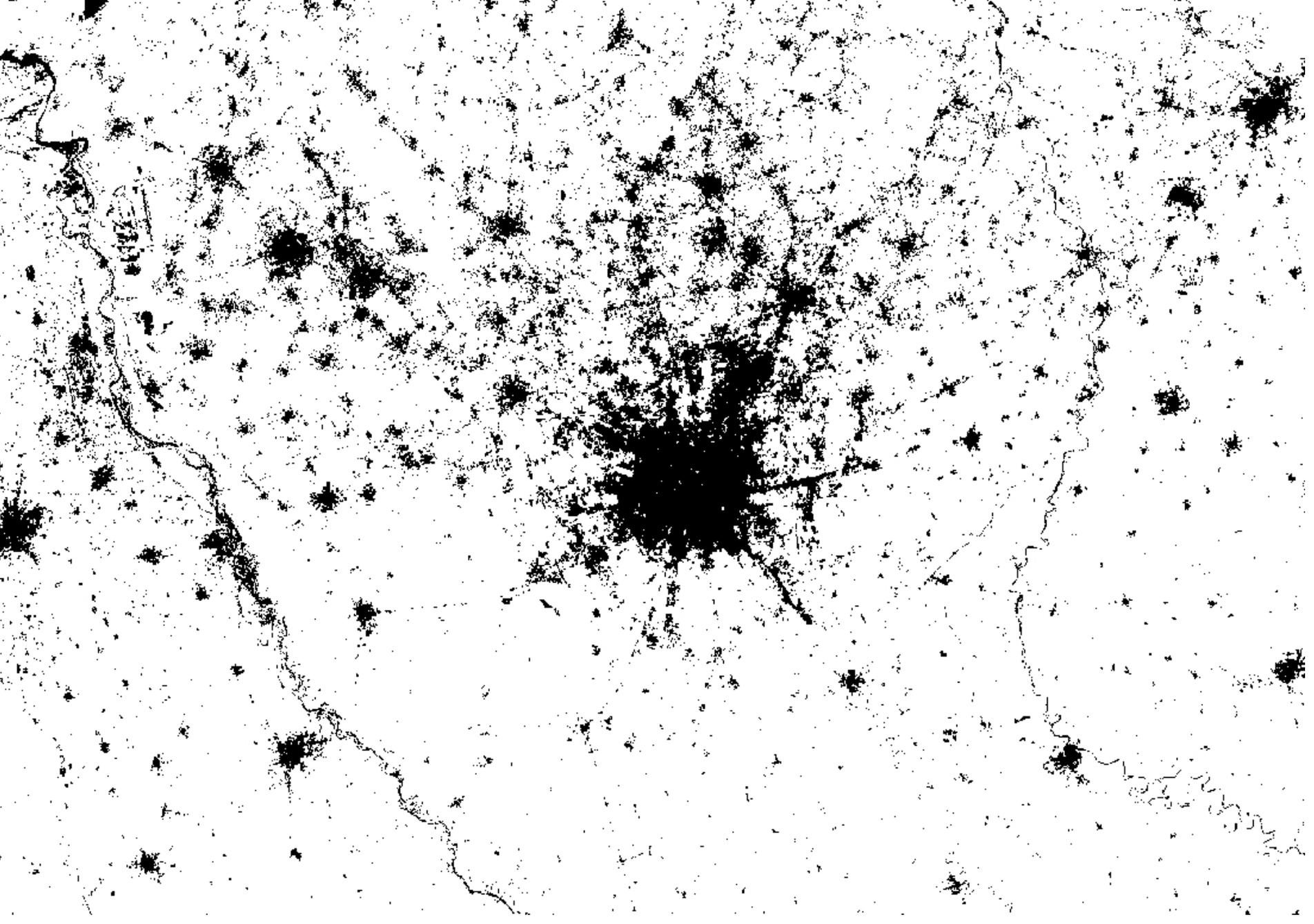
North America: Bos-Wash 54 MP, South Florida, North California 13 and South California 21, Chicago-Pittsburgh 46

Central-South America: Greater Mexico 45, Rio-Paolo 43, Greater Buenos Aires 14

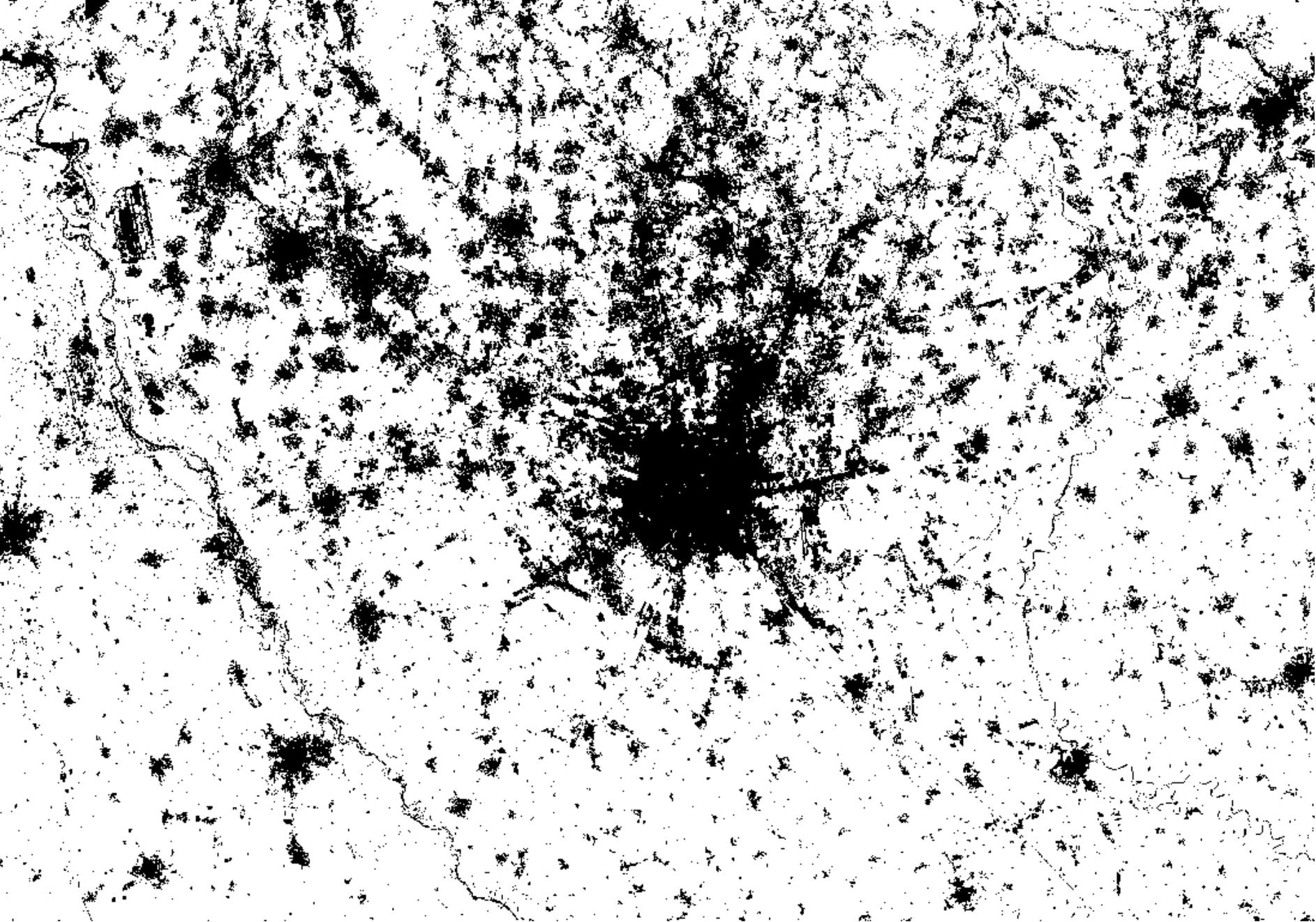
Asia: Greater Tokyo 55, Osaka-Nagoya 36, Shanghai-Nanking-Hangzhou 66, Great Beijing 43, Dheli Lahore 120, Mumbai Poona 62, Bangalore Madras 72

Europe: Ansterdam-Brussels-Twerp 60, South England 50, Stuggart –Frankfurt-Mannheim 23, Turin-Milan-Venice 25, Barcelona-Lyon 25

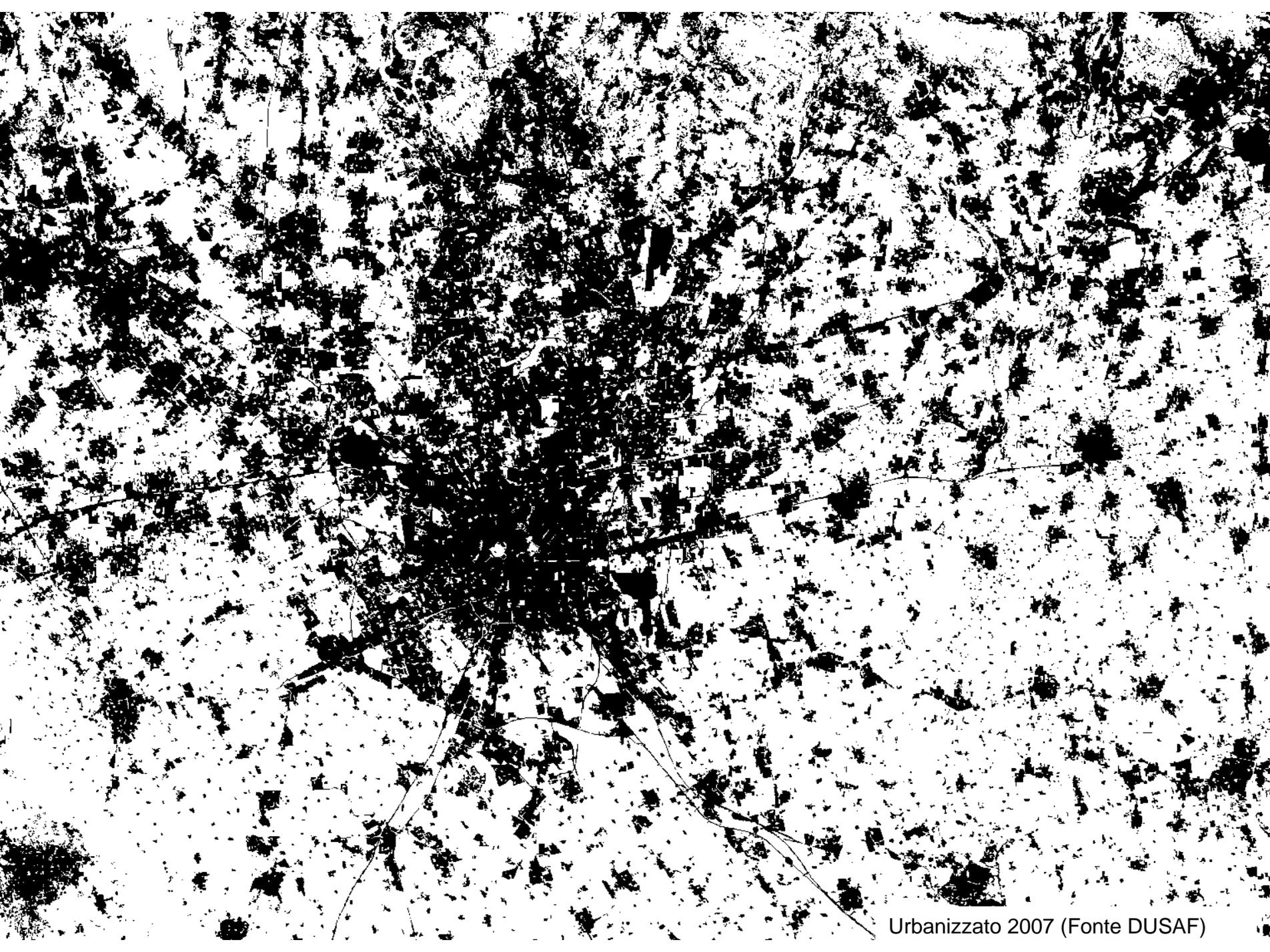


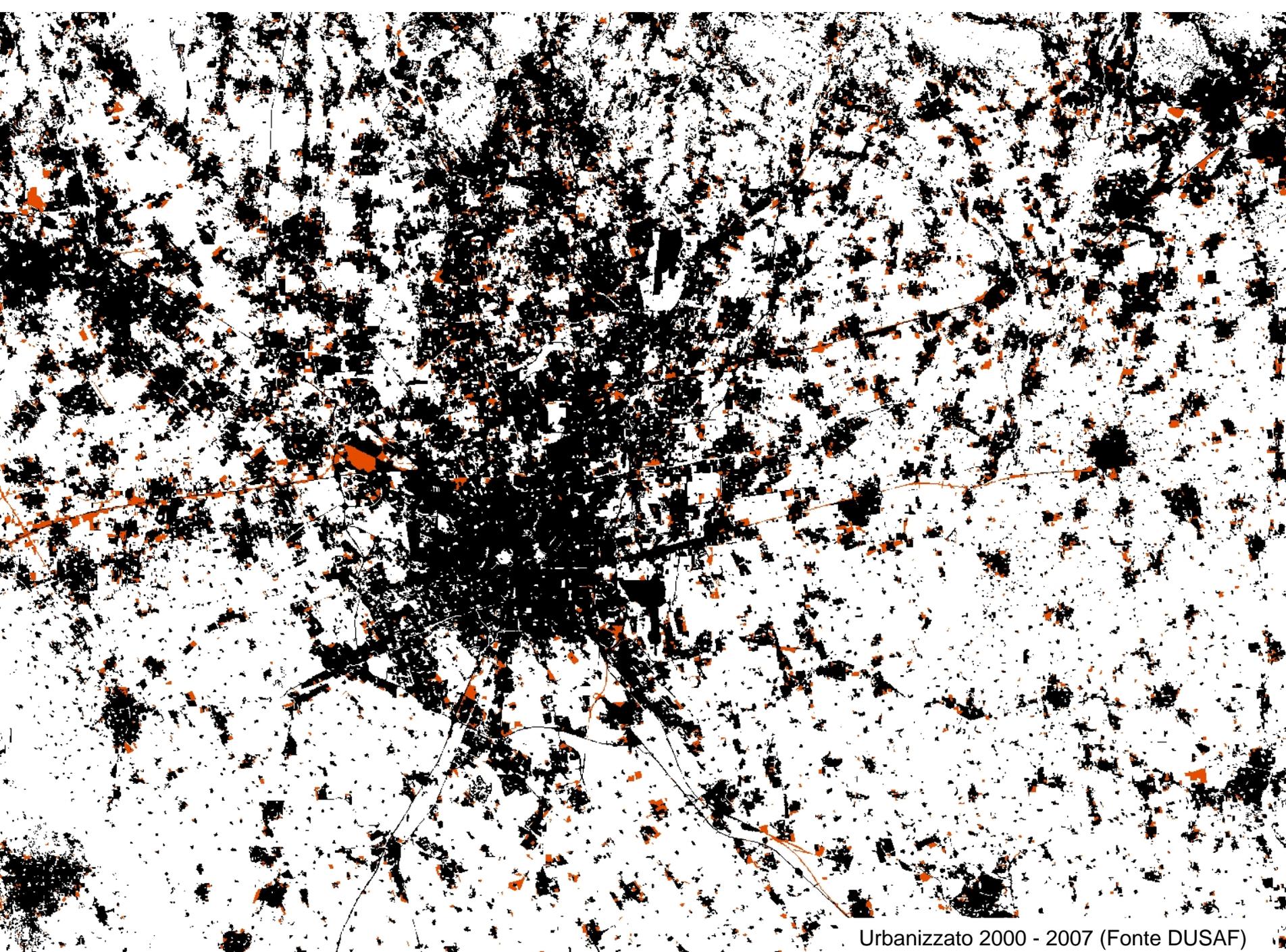


Milano: 1972 (Global Land Cover Facility)

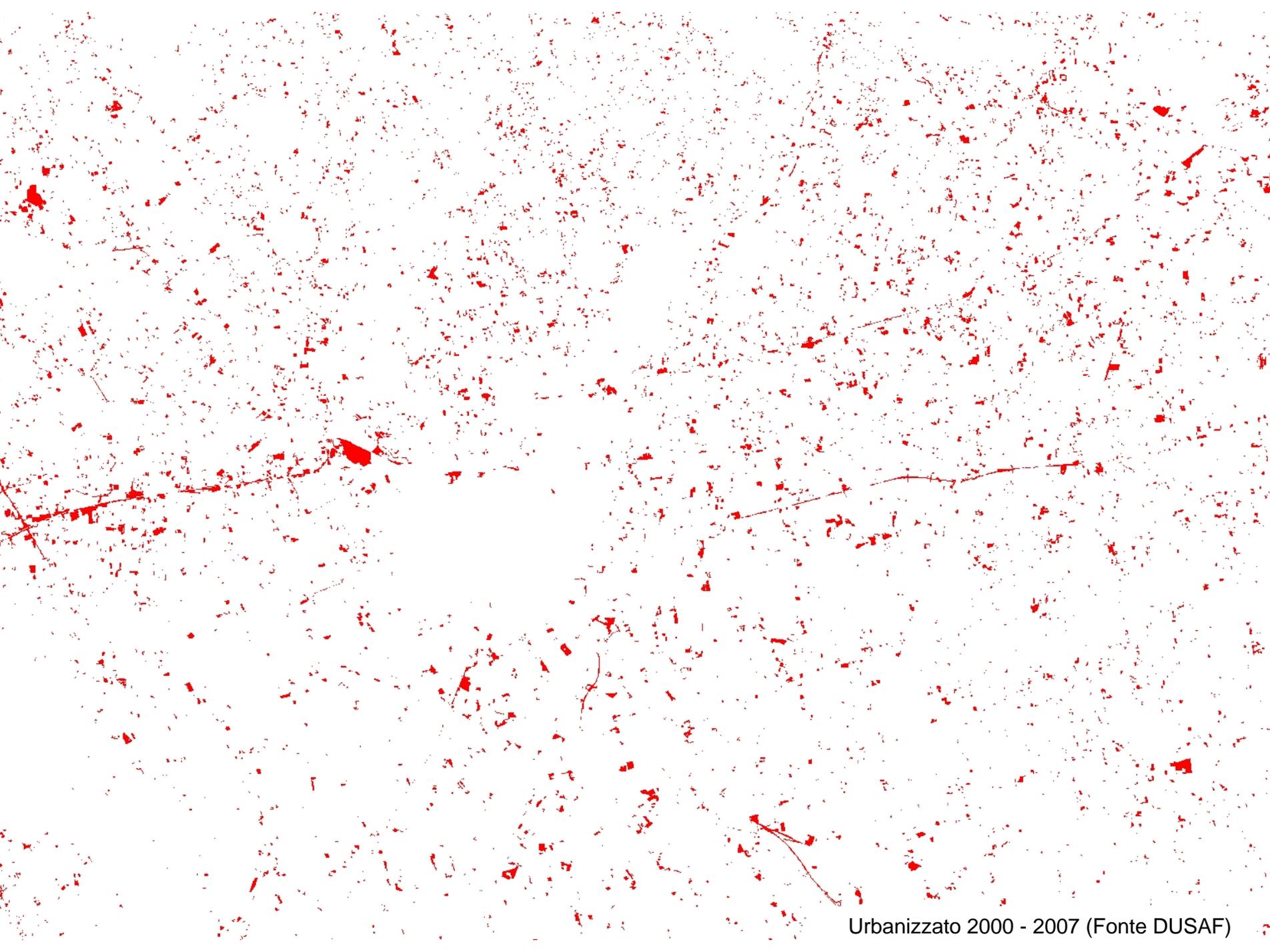


Milano: 2004 (ARPA Lombardia)





Urbanizzato 2000 - 2007 (Fonte DUSAF)



Urbanizzato 2000 - 2007 (Fonte DUSAF)

4. Determinants of change

movement

fragmentation

construction of new networks

Movement

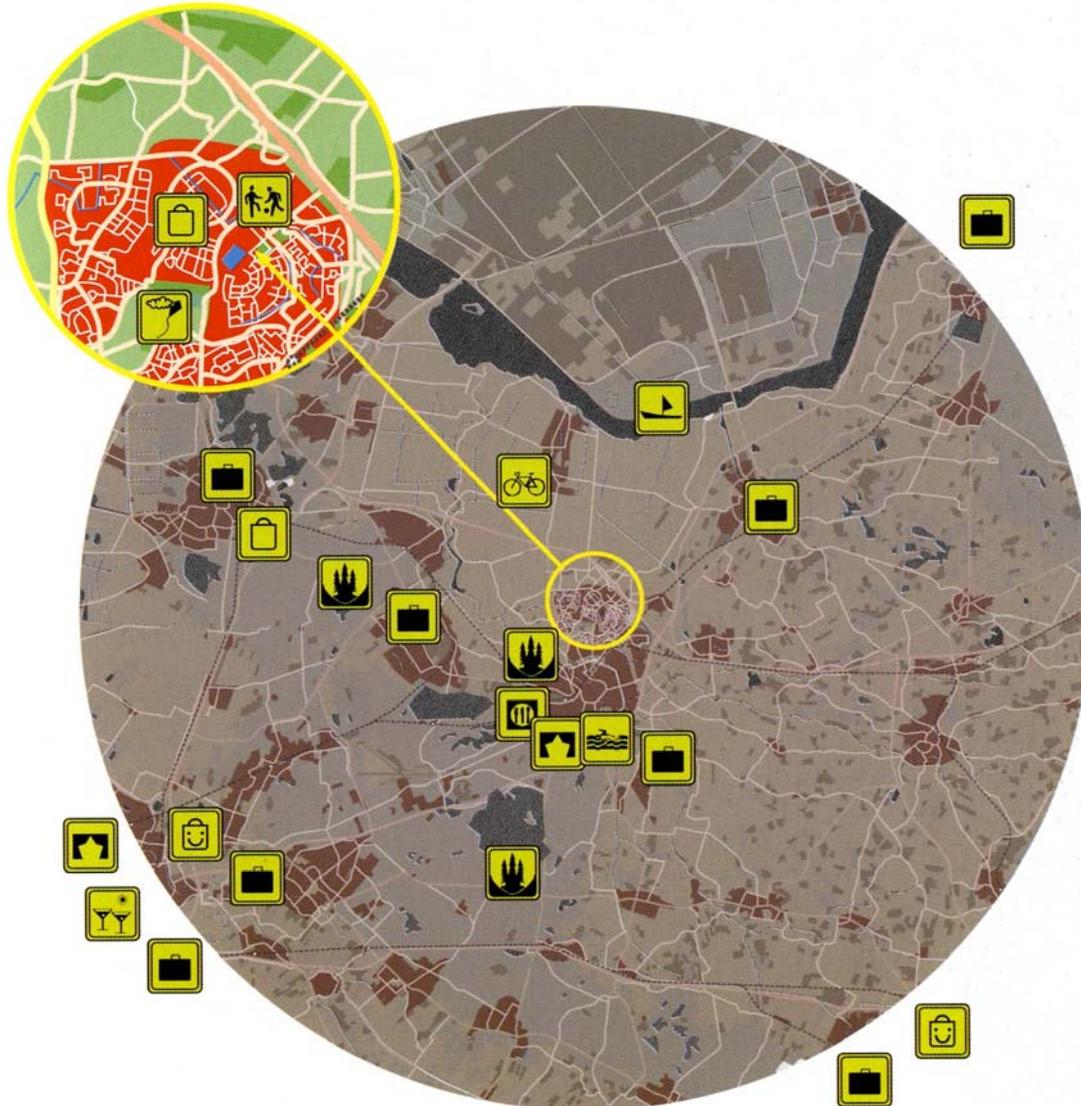
the city is no longer an ordered and isolated model of mobility

the contemporary city is an agglomerate of flows

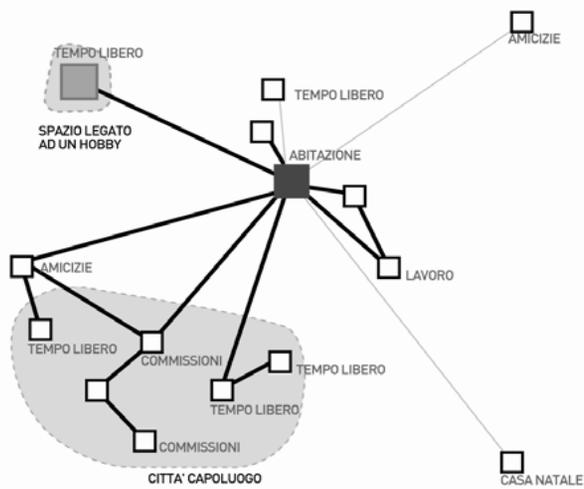
flows of **people**: migrants and commuters different modes, more and more non systematic

flows of **goods**: explosion of logistics

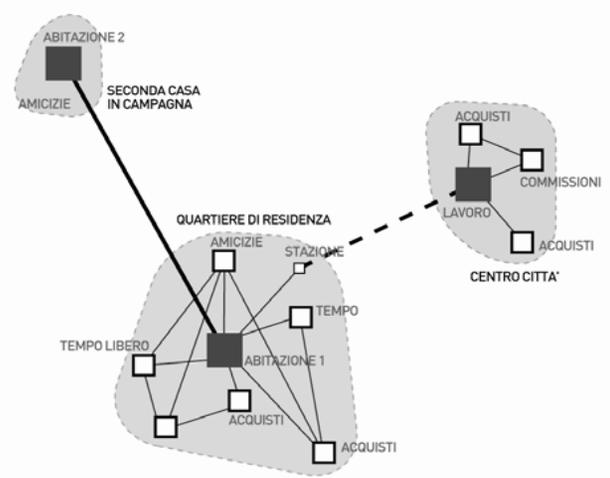
Households: spatially dispersed personal activity places, held together by mobility (e.g. *Kattenbroek, NL*)



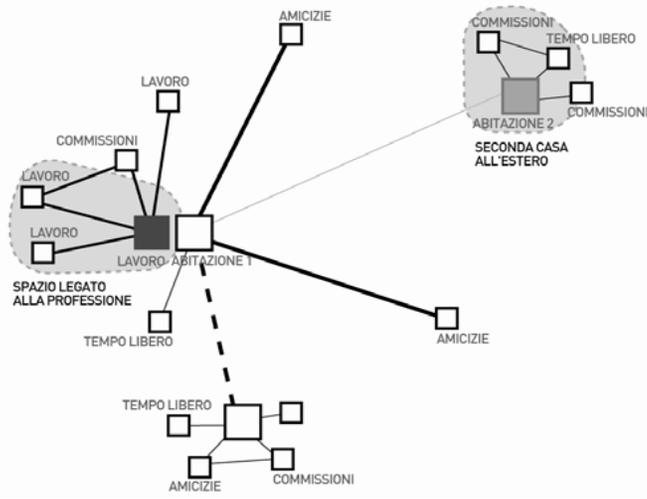
(Reijndorp et al.)



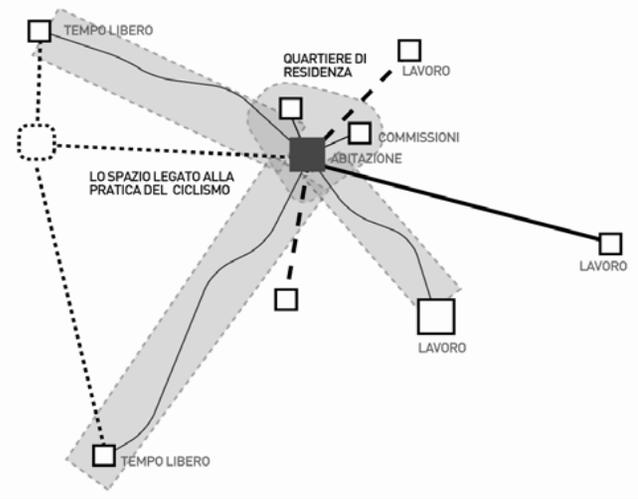
Francesco, 62 anni, pensionato



Carla, 60 anni, pensionata



Monica, 35 anni, libera professionista



Giancarlo, 45 anni, tecnico informatico

Fragmentation

- **Economy**: shattering of the productive system
- **Society**: town, neighborhood, family, all the relations linked to proximity
- **Administration**: proliferation of units, public, private, semi-public, different levels, departments, agencies, consortiums

Atomisation of society and multiplication of decision makers

Construction of new networks

- “distance communities” ethnic, professional, cultural, interest, sport, music, passions, political groups, consumer groups, food, alternative lifestyles, animals
- “virtual communities” Facebook, bloggers, internet groups, radio listeners
- “temporary communities” commuters, students, tourists, city users

people spatially close become distant and spatially distant become close



To sum up

- The world is rapidly urbanizing
- Space is losing its pervasive meaning and is changing its meaning, but the development of distance communication goes together with F2F
- Cities are again the driving forces but they are profoundly changing
- Looking at the long history of civilisation we can see that innovation has always happened in the urban
- But what is “the urban” now?
- The formation of mega-city-regions
- The new city presents challenges and opportunities

5. What role for planning?

Traditional planning is challenged by the new urban form and the new urban phenomena:

- The extension of the city across administrative borders
- The loss of primacy of spatial relations
- The emergence of distance relations
- The consequent loss of importance of any form of zoning
- The fragmentation of urban landscape: a growing number of actors acting independently but being more and more interdependent

- An economic crisis which produces de-growth and increasing inequalities
- The need to deal with an ageing urban society
- The need to deal with climate change and its implications upon the development model
- etc.....

A planning project that during the 30 years after the II WW thought to be able to change society through a rational regulation and management of spatial relations finds itself disarmed

- There are not solid theories of planning and urban change that can drive us but problems are all there and problems must become the drivers of a renewed planning project
- Planning as John Forester states is “the organisation of hope” and we need today to discover new instruments for attacking new urban problems

- If problems are the drivers we need to develop a form of planning which is more exploratory adaptive, participatory, enabling
- Which is able to develop a new inter-language between expert and lay knowledge the hardware and the software of the city, spatial and non spatial relations

- Here is where new technologies come into play
- Not the technological solution of urban problems, beyond any smart city rhetoric
- But the growing capacity of using the new media to enlarge participation to the planning process

- And to work upon new urban common goods which are re-shaped across spatial and non spatial relations

“we cannot solve today’s problems using the mind-set that created them”

Albert Einstein

Thank you....
sandro.balducci@polimi.it
www.sandrobalducci.com

