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**“Transitional Morphologies” studies.  
An agenda for 2030 between Europe and China**

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**Abstract**

*The year 2030 will be an important deadline for global economics, society, culture and scientific knowledge. For China it is the perspective of the possible development path, for Europe it is the horizon of the new science and technology research program, for UNO it is the given term to reach a series of sustainable goals.*

*The “Transitional Morphologies” Joint Research Unit (at Southeast University and Politecnico di Torino since 2018) operates on the formal analysis of the dynamics in urban form between China and Italy in order to improve the design practice through new technical and conceptual tools.*

*The keywords to figure out next ten years of studies in urban morphology may be “Transition” and “Tradition” and their role in European and Chinese cultures, overall considering the interaction of human beings and urban space: of course, the interdependence of culture and humanities with new technologies will be a crucial issue looking at the future.*

**Keywords:** 2030, urban morphology studies, future cities, transition, tradition

**Introduction**

The aim of this short paper, presented in the framework of ISUF 2021, is an attempt to anticipate the main questions that urban morphology studies will probably face in next decade. It represents an ongoing debate within the Joint Research Unit “Transitional Morphologies” (SEU Nanjing and PoliTo Torino), devoted to establish the new possible frontiers within the discipline of urban morphologies. Authors’ hope is that these brief notes can open, even through several critical approaches, a broader discussion among scholars.

**Background**

“Transitional Morphologies” (形态行进, xíngtài yǎnjìn) Joint Research Unit works on the dynamics of evolution in urban forms.

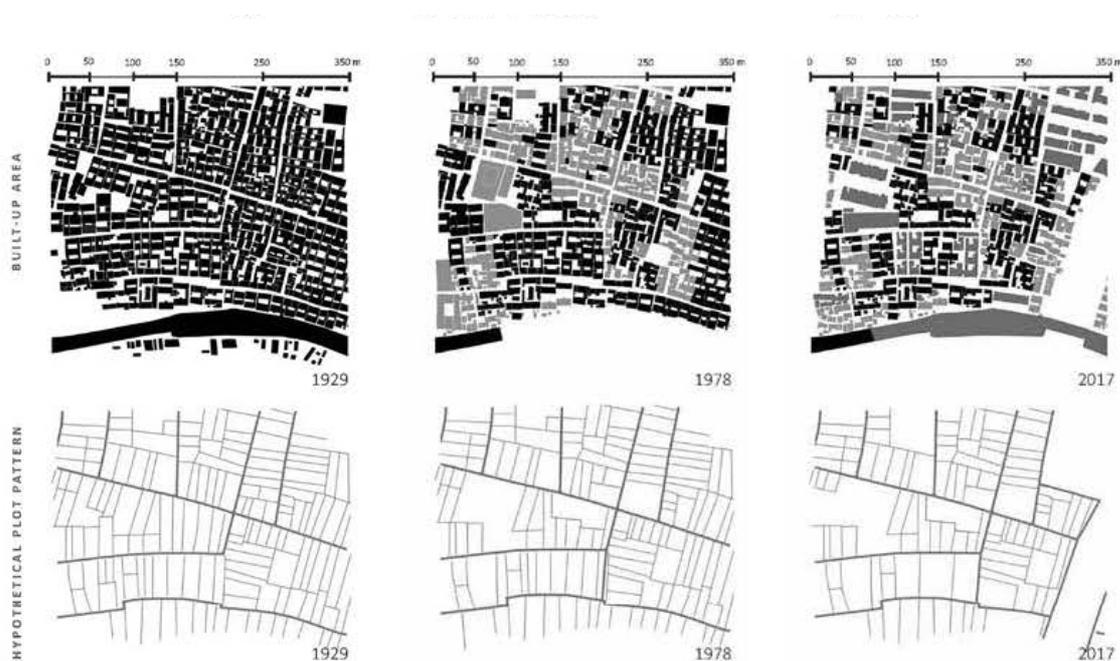
In order to do that, one of the main *focuses* of interest for transitional studies is the concept of TRADITION, keeping the idea that nothing is blocked forever in urban forms, but that there is a continuous delivery of

spatial solutions from one generation to the subsequent one. Of course, this is an anthropological issue, which is worth not only for urban settlements and architecture and buildings type, but for every cultural phenomenon (language, art, behaves, religions and so on).

Actually, the two keywords TRADITION and TRANSITION show in our cultures some analogies: both of them explain a passage from point A to point B, but "Transition" means the way of going from one condition to a new one, while "Tradition" means the way of letting a generation give something to the next one, often changing a little the object that is ongoing to be given.

In European cultures, TRADITION is coming from the latin verb *tradere*, which means deliver or "transmitting" (coming from trans/through and dare/giving: giving through the successive generations). In Chinese culture, TRADITION is 传统 (chuántǒng), where 传 means "hand down" (example: from ancient times) and 统 gives the idea of interrelation, meaning "keeping together" and "uniting".

So, both cultures show a strong idea of preserving something in order to pass it to the future, but with the clear understanding that in the dynamics of the passage from a generation to another one, changes normally occur. (figure 1)



**Figure 1.** Investigation on the urban morphologies transitions in Nanjing Hehua Tang from 1929 to 1978 and 2017 (from Triscioglio M. (2020) 'Note on the transitional urban morphologies as a criticism of urban studies in the Chinese context. The typological map on Nanjing Hehua Tang', U+D urban form and design, 14, 14-27).

In 20<sup>th</sup> century both cultures reflected on the duality TRADITION/MODERNITY, because of philosophical and historical questions and maybe also for a deeper awareness of the idea of TRADITION and for the innovative approach with the younger idea of "progress", that has been the real background of MODERNITY.

The book by Eric Hobsbawm and Terence O. Ranger, *The Invention of Tradition* (Oxford, 1983) in Europe, as well as the studies by Chen Lai, collected in his *Tradition and Modernity: A Humanist View* (Beijing 2006 and now Leiden/Boston, 2009) in China, are together the milestones of a relevant global investigations.

## **Methodology**

The methodology proposed for this paper is describing the meaning of 2030 as global deadline and outlining a set of VISIONS, in order to pre-view several research lines for urban morphology studies between Europe and Asia in the next decade.

Each VISION can be described through a general opposition of concepts and can be described by a main bibliographical reference. This is just an agenda, a list of five issues that will be at the core of our interests of researchers in next ten years. Epistemologically speaking, it is just a conjecture, offered to be discussed and maybe transformed in a new conjecture, better defined and maybe nearer to the final outcomes. We like to consider our list as a “provisional map”, a conceptual tool that could be useful for our exploration of new horizons and for sure, at the end of the exploration’s time, that conceptual map will be totally re-drawn and totally changed.

What is sure, nowadays, is the importance of the deadline represented by the year 2030.

## **Results and Discussions**

Year 2030 will be an important deadline for global economics, society, culture and scientific knowledge. For China it is the perspective of the possible development path, for Europe is the horizon of the new science and technology research program, for UNO is the given term to reach a series of sustainable goals.

On September 25<sup>th</sup> 2015, the General Assembly of United Nations took the historical resolution A/RES/70/1 “Transforming our world: the 2030 Agenda for Sustainable Development”. That was a kind of a paradigm shift in approaching the relationships between human beings and the governments of their states with the planet conditions. Almost each of the 17 sustainable development goals globally established in that moment has something to do with the urban life and so the urban form. It was immediately clear that the future of the planet will be an “urban future”, due to urbanization’s processes on going nowadays. (figure 2)



**Figure 2.** The Sustainable Development Goals are “a blueprint to achieve a better and more sustainable future for all people and the world by 2030” as stated by United Nations (2015) Resolution adopted by the General Assembly on September 25<sup>th</sup> 2015, Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1).

In September 2019, the Ministry of Foreign Affairs of the People’s Republic of China published the 126 pages of *China’s Progress Report on Implementation of the 2030 Agenda for Sustainable Development*. Through that document, China “aligns implementation of the agenda with medium- and long-term national development strategies such as the 13<sup>th</sup> Five-Year Plan for Economic and Social Development of China to promote balanced economic, political, cultural, social and ecological progress”. After describing the actions for catching the UNO 17 sustainable goals, the report lists five specific fields of implementations: Precise Poverty Alleviation; Innovation-Driven Development; Ecological Civilization; Revitalizing Rural China; Belt and Road Cooperation. The five fields of implementations show to be clearly urban-based and linked with the question of urban settlement. That report was of course arising also from the famous research published in 2013 by The World Bank Development Research Center of the State Council People’s Republic of China: *China 2030. Building a Modern, Harmonious, and Creative Society*.

Europe 2030 is the true deadline of the new European Research Framework Program (2021-2027), whose title is simply *HORIZON EUROPE*. Within it the main research lines are six: Health Culture; Creativity and Inclusive Society; Civil Security for Society; Digital, Industry and Space; Climate, Energy and Mobility; Food, Bioeconomy, Natural Resources, Agriculture and Environment. Again, there’s no a specific field devoted to

the researches on urban settlement, but the pervasive role of cities and communities in the research strategies are evident also on the European side.

Considering the sustainable goals described by UNO, the implementation's fields announced by China and the main research lines declared by Europe, and by comparing those reports with the actuality of urban morphology studies, we can figure out a general field of studies occupied by five main topics:

### **1. Urban spaces design practice in the contemporary and future cities, that are expected to be smart and sustainable**

Nowadays the design practice is still linked to 19<sup>th</sup> and 20<sup>th</sup> centuries models and methods: the block, the street, the square and the gated community are the prevalent formal elements in approaching the design of a city. But when cities in the world will become really smart and technologically managed and/or at the same time they will be finally affected by the (probably heavy) problems of urbanization, which kind of design tools the urban design practice will we be able to use? Which will be the object itself of design practice? Maybe not only spaces, but also behaviours, or procedures, or something else. The book by Malcom McCollough, *Ambient Commons. Attention in the Age of Embodied Information* (MIT Press, Cambridge Mass., London 2013) is useful for understanding the new horizon of our interpretation of (innovative) urban spaces.

### **2. The role of tangible (roads) and intangible (IoT) infrastructures in urban morphology**

Historically, the maps of cities (in Asia as well as in Europe) owe a lot to the streets' networks representation. A morphological map is almost always the drawing of a grid, because of the great structural role played by roads and streets in organizing urban space. However, a future city, widely organized through Internet of Things (IoT) devices, will offer to the attention of planners and urbanist also the intangible road of digital infrastructures (actually, sometime not really intangible: cables, boxes, cabins). Will this technological part of the urban system enter in the consideration of urban morphologists? The book by Keller Easterling, *Extrastatecraft. The Power of Infrastructure Space* (Verso Books, London, New York 2014), states a first introductory reasoning to the design role of digital infrastructures.

### **3. Mapping the transitions (through automatic tools: logics, geometries and algorithms)**

In mapping the cities and above all in mapping the dynamics of the fast development and changes of urban forms, the use of the computational instruments will be more and more frequent. The capability of representing urban data and elements as a mathematic ontology, in order to describe them to a machine in the procedure of machine learning, is one of the main goals of the most advanced researches in the fields of

urban morphology. What is important is not forgetting the physical correspondence of algorithms with the concrete cities (made by buildings and spaces). The recent book by Michael Batty, *Inventing Future Cities* (MIT Press, Cambridge Mass., London 2018) is already tuned on that paradigm shift, but it preserves strong roots in the urban civilization of Europe and of the World.

#### **4. The coherence of innovative functional building types with the existing urban fabrics**

The relationship between buildings functional typologies and urban form (texture, patterns, grids) will probably face a deep crisis in front of more and more innovative functional request for new buildings (more and more organized to host nowadays mix uses) and the loses of the urban role of those buildings themselves, in term of social and symbolic value. The questions of new urban codes, of new place making procedures, of methods for correct interpreting the real expectations of urban communities will become relevant in the next decade. The book by Eran Ben-Joseph, *The Code of the City. Standards and the Hidden Language of Place Making* (MIT Press, Cambridge Mass., London 2005), with its historical background, offers a solid basis to open a reflection towards the future of these topics.

#### **5. Risk management and urban morphology (the “transition” paradigm and the urban resilience in emergency situations)**

The first two decades of 21<sup>st</sup> century were marked by an impressive series of disasters, linked to environmental problems, climate changes, terrorism and lastly ~~also~~ the pandemic emergency. The question of risk management touched also the reality of cities (their streets and their buildings) and the paradigm of urban resilience became more and more diffused. Maybe urban morphology studies will develop a new kind of theories, developing from resilience and adaptation to the new paradigm of “exaptation”. There is in fact not only the capability of urban objects to adapt themselves to new conditions, transforming their nature, but also (and maybe more important) the nature itself of some urban objects that makes them able to face changes and transformation, in one word “transitions”. The word “exaptation” is coming from the biology of evolution: Stephen J. Gould and Elisabeth S. Vrba wrote in 1982 an important paper entitled *Exaptation. A Missing Term in the Science of Form* in “Paleobiology”, vol. 8, pp. 4-15. It will become well known among urban morphologists in next decade.

## **Conclusions**

In the framework of the 17 UNO sustainable goals, urban morphology studies will face in the next decade innovative topics like: the DIGITAL EMBODIED URBAN SPACE, the INTANGIBLE URBAN INFRASTRUCTURES,

the MATHEMATICS-BASED MAPPING OF URBAN DATA, the URBAN CODING FOR NEW BUILDING TYPOLOGIES, the URBAN "EXAPTATION" AS ANSWER TO RISK MANAGEMENT PROCEDURES.

These five topics can be furtherly declined in their strong links with the Chinese fields of implementation towards 2030 (Precise Poverty Alleviation; Innovation-Driven Development; Ecological Civilization; Revitalizing Rural China; Belt and Road Cooperation) as well as with the main research lines of the European Research Framework Program (2021-2027) HORIZON EUROPE (Health Culture; Creativity and Inclusive Society; Civil Security for Society; Digital, Industry and Space; Climate, Energy and Mobility; Food, Bioeconomy, Natural Resources, Agriculture and Environment). The cultural concept of TRADITION and the paradigm of TRANSITION in urban forms will be fruitful tools in approaching each of those five topics as the main research challenges for next decade.

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