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FUTURE SCENARIOS



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TECHINE

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SCENARIOS**

Design Technology Practice

FUTURE SCENARIOS

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Metadesigning the urban space/environmental system. Inter- and trans-disciplinary issues

ESSAYS AND
VIEWPOINT

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Abstract. Deindustrialisation and urban densification are shifting the vitality of the city into private spaces. Once places of socialisation and participation, public spaces are now areas of conflict, risk and separation. The horizon for regenerating and revitalising urban public space is not only technical, but also trans-disciplinary and socio-technological-environmental.

The essay reconsiders unbuilt urban space as a space/environmental system; an interface between people, technologies, nature and society that favours a more context-sensitive and responsive project.

The text highlights new roles for the metadesign process by working with material, connective, functional and relational dimensions, new vectors of urban metamorphosis and eco-relational qualities of future public spaces.

Keywords: Urban transition; Space/environmental system; Technological-environmental metadesign; Regulatory interfaces.

Urban transitions and the dissolution of public space

Processes of economic, territorial and political deindustrialisation are signalling the end of

the modern idea of the city. Nonetheless, cities continue to attract those seeking better employment opportunities, economic stability and socio-cultural occasions. The global urbanised population is expected to reach 68% by 2050 and 85% by 2100 (UN, 2019).

The end of the modern city will also signal another inversion. Growing environmental problems and the need to limit the consumption of natural resources and pollution mean that demographic concentration moves hand in hand with a re-densification process of urban areas that responds to two issues.

The first regards the compensation of ecological-environmental imbalances generated by extensive urban growth through focused and selective densification (Kiang Heng and Malone-Lee, 2010; Munoz, 2012). The second concerns the possibility of welcoming flows of migrants fleeing the climatic, economic and geopolitical instabilities plaguing the globe.

Re-densification of the city can also generate a number of criticalities. The concentration of buildings often attacks the open spaces of sprawling urbanisation, reactivating the consumption of soil and the saturation of the urban fabric. Demographic-functional *mixité* has negative effects on urban vitality, concentrated in increasingly more exclusive enclaves. Public spaces tend to lose part of their value; incorrectly designed, they are transformed from spaces of social interaction and participation into territories of risk, conflict and separation.

Deindustrialisation and urban re-densification can trigger a broader dissolution of the city's public spaces. However, a loss in the meaning and functionality of urban public space can also be identified in altered interactions between people and the city caused by a *surplus* of digital technologies (e.g. Lavasa, Masdar City, New Songdo City, Ordos, PlanIT Valley, Santander).

Farinelli posits that the modern concept of space and thus also of urban space was built on the reiteration of homogeneities, isotropies and continuities (Farinelli, 2009). The spread of new digital devices means that we are constantly hyper-connected with a multiplicity of places in a global information network that ruptures

the perceptive and cognitive constants of space (Henaff, 2008). Increasingly more interactive, we inhabit smart cities designed to simplify everyday activities. Yet this hypertrophy of information-communication is also diminishing the need for public spaces and reducing the physical-cognitive capacities required to make use of them (Sennett, 2018).

The field of design is still far from identifying trajectories for reintegrating public spaces within the real processes of inhabiting the city. It continues to propose strategic forecast planning for management and procedures, reiterating univocal top-down solutions. It is limited to the technological assessment of effects induced by deterministic interventions. Design remains trapped in the resolution of individual problems and the development of specific services and products.

Urban public spaces have become the field of disharmonic design incursions, from above and below. Transformed into a «no man's land» (Giallocosta, 2006), it must, instead, be entirely reimagined, starting from its multiple and synchronic identities. The public spaces of contemporary cities are characterised by a complex dendritic and heterogeneous structure made of absences, incisions, natural elements, residual conditions, margins and shifting boundaries (Gausa, 2003). The flow of continuous urban transitions is one of voids, intervals, in-betweens, third landscapes, heterotopias, liminal spaces, edges and fringe areas.

This situation reveals the importance of reinterpreting urban space as a «place/non-place» of co-evolution between man-nature-technology (Dierna and Orlandi, 2005), as a perennially new spatial-temporal infrastructural system (Easterling, 2014).

For the field of design this challenge assumes an inter/trans-disciplinary value that cannot develop as a «phenotypic» definition of closed and predetermined forms. Instead, there is a need to reconnect the different skills and trajectories of environmental, urban, landscape, technological and architectural design. We must work with «genotypic» codes that permit investigations, hypotheses and forecasts of the multiple potentialities of public space as a system of relations that is inhabited, perceived and imagined (Tagliagambe, 2018).

For a redefinition of public space as a space/environmental system

With the transition from the modern to the contemporary city, the urban environment increasingly resembles the

metapolis hypothesised by Ascher or Gausa: a matrix of relations generating multiple combinations of functions, uses, practices and behaviours. The *metapolis* questions the modern notion of void space between homes. Public space is no longer an absence of the built, but takes on a meta-spatial connotation (Ascher, 2001; Gausa, 2003).

Considering public space as meta-space means reconsidering

the systemic interpretation adopted to describe, analyse, design and manage it. The vision rooted in construction, based on the dualism between stable entities (technological system) and variables (environmental system), is now unsuited to the complexity of contemporary public spaces.

There is a need to reinforce a multidimensional vision of public space through cross-systemic design processes. Diverse texts highlight the multidimensionality of public space and the progressive increase in its relations with the social, individual, ecological, economic and cultural variables of context.

Some studies (Friedman, Habraken, Lydon) present public space as an interacting system that transcends the clear separation between private realm, public city, and the authorial and unidirectional vision of design (e.g. *Paris Olympic Ville Spatiale* models, NACTO guidelines). In other fields (Appleyard, Cullen, Glazer, Mantho), public space is conceived as a system that activates ecologies, loops and supply chains that interrupt the traditional opposition between city, nature and inhabitants (e.g. Project for Public Space experiences, *Helsinki Accessibility Plan*, *Rotterdam Climate Change Plan*). Other studies (Gehl, Landry, Lynch) investigate public space as a system that generates well-being, comfort, safety and health for the city's inhabitants, exploring different codes and practices of perception, participation, identity and use (e.g. Gehl *Soft City* principles, *The City at Eye Level* projects).

What emerges from these disciplinary contributions is above all the necessity to clearly state what the public space of the city 'no longer is'.

Public space is no longer a container, delimited by buildings, of configurationally stable objects, infrastructures and people. More than the expression of community life, it is meta-place for the co-existence of public and individual dimensions existing in a space-temporal *continuum* with strongly blurred edges. It is difficult to distinguish between localised physical space and immaterial global space. Furthermore, public space cannot be manipulated by representing functional typologies from the past, as it is influenced by the continuous instabilities and unpredictability of the environment. It cannot be designed using closed forms. Its transformability must be open, dialogic and process-based. Finally, it cannot be re-imagined using dichotomic logics of deduction/induction, top-down/bottom-up, universal/specialised, public/private (Fig. 1a).

Working on the regeneration of urban public space means considering horizons for design that are not only technical-constructive but also technological-environmental. This hypothesis does not exclude the ability to measure the response to progressively more hybrid and complex problems-requirements frameworks; at the same time, however, it never loses sight of the centrality of the multiple configurations that contemporary public space can assume in the short-, medium- and long-term.

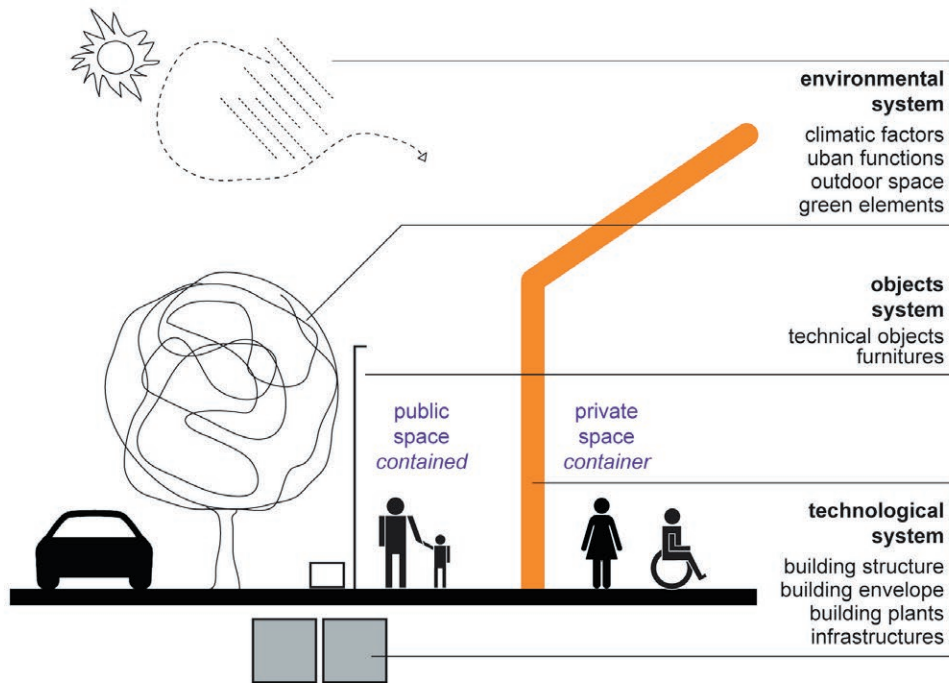
The system of urban meta-spaces should be redefined as a space/

environmental system (SES): a regulatory cross-systemic entity influencing culture, behaviour, perception, ecology, socio-economics and decision-making to improve conditions of co-habitation in the city. More specifically, it is a question of rethinking the unbuilt parts of the city as an intermediate device for extending levels of interaction/adaptation between urban components and defining alternative context-sensitive and responsive scenarios of sustainability, as well as introducing inhomogeneities, anisotropies and discontinuities.

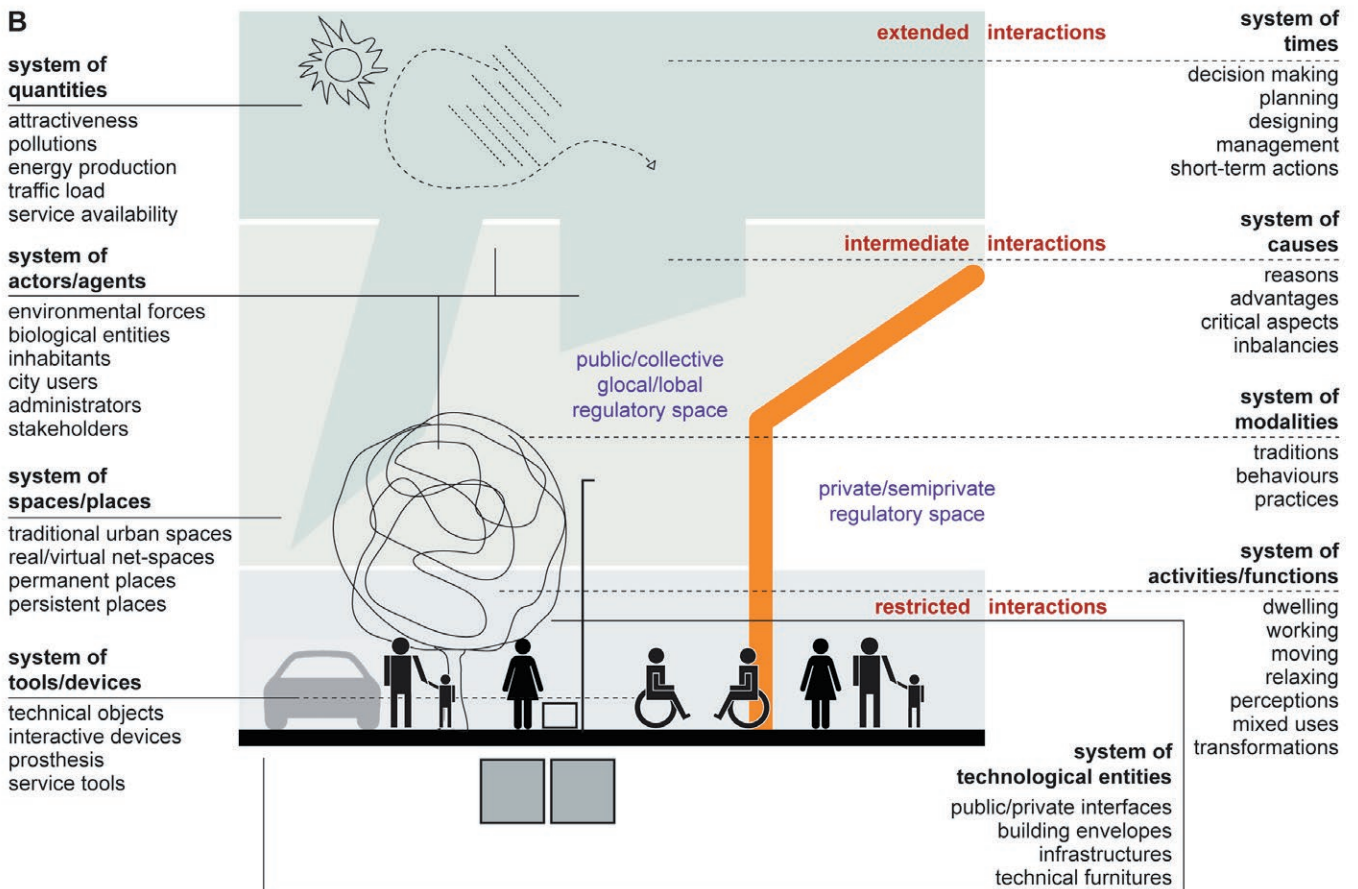
The notion of SES generates at least nine regulatory sub-systems (Fig. 1b):

1. the system of actors/agents interacting and changing within the SES including: inhabitants, city users, administrators, stakeholders, biological-vegetal entities and the whole of environmental forces;
2. the system of activities/functions characterised, other than by dwelling, working, moving and relaxing, by the coexisting processes of perception, mixed use and transformation involving multiple public and/or private levels of SES;
3. the system of spaces/places that integrates traditional urban space, as each inhabitable entity of the SES is a real/virtual space within globalised networks, as well as a locus of identity defined by permanent and persistent local elements;
4. the system of times linked to both the composite/long-term timelines of decision-making, planning, designing and managing the SES, and the ordinary/short-term timelines of using, modifying and adapting the city;
5. the system of causes, including the multiple questions, reasons and advantages deriving from the appropriate use of the SES, together with the imbalances and unpredictability, which can determine inappropriate use or abandonment;
6. the system of modalities relative to the multiple traditions, behaviours and practices employed by actors/agents to explore, remember and use the SES, in a continuous search for conditions to improve and/or optimise inhabitability in a changing context;
7. the system of tools/devices, including technical objects, machinery and prostheses as interactive entities, which can enable/disable individuals and communities and generate forms of inclusion/exclusion (WHO, 2006);
8. the system of quantities, to ensure that the interaction between nature, people, society and technologies can affect urban performance (touristic attraction, emissions of pollutants, energy productions, traffic loads, service availability);
9. the system of technological entities, which includes relational interfaces between public and private spaces as transportation infrastructures, building envelopes and technical furniture.

A



B



This rising complexity of metadesign goals requires that we no longer employ closed and univocally defined forms or hypotheses/solutions that only facilitate, simplify and standardise. The public space of the city must be investigated and confronted in all its intrinsic complexities, diversities and levels of adaptation.

The inter/trans-disciplinary dialogue that can be established by the urban SES opens up toward considerations and forecasts of possible future alternatives for urban public space. In these future explorations, the design process develops and evolves around the metamorphoses of equilibria between perceptive, social, visual, functional, chronological and morphological aspects (Carmona *et al.*, 2003).

These continuous transitions and shades of collective co-existence in the city appear to re-open the debate not only on the central role of the metadesign of public space, but also of its cultural, social and political role so that we can once again attribute the built urban environment with the Isocratic definition of *psychè poleos*, the “soul” of the city.

NOTES

¹ This paragraph summarises methodological reflections on the metadesign process resulting from research experiences conducted by the author in inter/trans-disciplinary teams: Chieti_Lab 2014/15, Pescara International Summer School 2015 and 2016, LIMEN 2017/18, RE-Live 2019, RE-live 2020 .

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At the time, in the holder of this issue of *TECHNE Future Scenarios*, no one could certainly imagine the serious incidents of public health emergencies that have invested nations and peoples, heavily engulfing the global economy. ‘What is to come’ – future scenarios – is not a new question’: this was the incipit of the call of the number, challenging and purposeful, certainly assertive as can be the thought of those who look to the future with positivity and optimism: «[...] As humans, we always have adapted our being in the world through artifacts, tools, built spaces to give a (precise) shape to the image of the future environment in which we will live»¹.

However, how will the future be? What environments we will live in and use? The current dramatic events necessarily require some reflection, albeit brief one. The pandemic that has taken the world by surprise, is removing optimism and security by highlighting a profound weakness in dealing with an event that, although announced over the years by other similar forms but underestimated by most people, has caught politics and science unprepared to give comprehensive answers and propose acceptable solutions even in the emergency. It is precisely the unpredictability of virulence that makes difficult the control if not through social distancing and confinement. A solution that can only be temporary.

It is inevitable, however, to wonder why the many possible dangers and risks that have long been linked to health problems (ebola, sars, etc.), environmental (climate change, disruptions, earthquakes, etc.) and, socio-economic (poverty, ghettoization, immigration, etc.) have not been addressed with the necessary attention. There are no convincing answers, also because in many cases the events appear unintentional but, almost always, they refer to serious human responsibility in not knowing how to prevent the event and, above all, not knowing how to deal with it. A lot of debate is going on, answers are being sought that science and politics have to mediate even in the face of an economic default that seems unstoppable. So the deep concern for physical health is associated with the psychological fear for the future resulting from the traumatic event that – as S. Freud says «[...]not being predictable makes any form of defence impossible»².

It is, therefore, legitimate to ask oneself what will be the future scenarios – possible, probable, preferable – with the awareness that at the moment there are no exhaustive answers. In fact, many of the certainties acquired during the last decades have disappeared, first of all, the deep conviction of being able and knowing how to control nature by serving its own needs.

If, therefore, the pandemic is creating an inevitable disorientation and a consequent slowdown of life in all its expressions, it cannot be denied that the environmental crisis that has characterized the last 50 years, and the economic crisis that occurred between 2007 and 2013, second only to the great depression of the early twentieth century, have long imposed on humanity a change of pace with effects, especially on the social level, not easy to solve.

Architecture, in front of the multiple challenges and their complexity, has to be able to relate to a multicultural society, in rapid change, increasingly forced to deal with the unpredictability of events. Therefore, the attention to the new scenarios, which are already prefigured in this issue, can provide adequate answers from the world of research and architectural culture, having in itself the ability to «[...]to develop a synthesis of scientific, social, political and cultural points of view at a time when the anthropocentric perspective has radically changed our approach to the environment, construction, technology and materials[...]»³.

Numerous and diversified papers contained in the text – 27 selected by double blind review among the 104 received – that through the development of the five topics⁴ proposed in the call, focus the issues on possible future arrangements.

It is, in fact, evident that with the wide diffusion of digital technologies, the culture of the project is undergoing significant transformations. On the one hand, by obtaining greater design and implementation performance. On the other hand – in the transition from a traditional, linear and sequential approach to an integrated and interactive one – modifying the ideation and expressive methods that will necessarily require a change in the management of the relationship between human creativity and artificial intelligence.

The result is an appropriate and profound transformation of the approach to the “project” of cities and for cities that will increasingly face urbanization and population growth, energy problems, land consumption, climate change and possible serious health events, associated with significant social problems already present in large urbanized areas. There are many simulations in worldwide to predict the extent of the phenomena, especially climate phenomena. There are also many backcasting processes done for the construction of future development scenarios and different approaches that, starting from ecological thinking, talk about Collaborative Design, Nature Based Solution, Circular Economics in which the production and consumption processes promote a circular logic “from cradle to cradle”. Certainly, the architectural and urban design, with greater attention to the metabolism of cities, will have to focus on new structures in which a renewed vision of sustainability reviews the relationship between anthropized and natural systems to contribute to their resilience as a stable condition, albeit dynamic, and not as an emergency solution.

This will be possible if there is a real cooperation between the world of design and that of industrial experimentation/production in which technological innovation – technical, material and design – associated with knowledge innovation, will make it possible to govern complexity, identifying transdisciplinary and interdisciplinary ways, even with immaterial collaborative forms, to respond to the main challenges of the future⁵.

It will be fundamental to re-think the figure of the Architect, his training and his new or renewed skills. For some time now, the

