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TeMA

This Special Issue of TeMA - Journal of Land Use, Mobility and Environment, collects twenty-seven contributes of international researchers and technicians in form of scenarios, insights, reasoning and research on the relations between the City and the impacts of Covid-19 pandemic, questioning about the development of a new vision and a general rethinking of the structure and urban organization.

A photograph of the Milan Cathedral (Duomo di Milano) under a blue sky with scattered white clouds. The cathedral's intricate Gothic architecture, including its many spires and statues, is clearly visible.

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A night-time photograph of St. Peter's Basilica in Rome. The basilica is brightly lit, and its large dome is a central feature. The surrounding area is dark, with some lights from nearby buildings visible.

Special Issue

Covid-19 vs City -20
scenarios, insights, reasoning and research

A photograph of a wide, multi-lane bridge in London, likely London Bridge. The bridge has a metal railing and is surrounded by water. In the background, the Houses of Parliament and the Elizabeth Tower (Big Ben) are visible under a cloudy sky.

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Special Issue

COVID-19 vs CITY-20

SCENARIOS, INSIGHTS, REASONING AND RESEARCH

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The cover image is a photo collage of some cities during the Covid-19 pandemic quarantine (March 2020)

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Special Issue

COVID-19 vs CITY-20

SCENARIOS, INSIGHTS, REASONING AND RESEARCH

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Imagining living spaces in extreme conditions: suggestions from a case study in Bari

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Abstract

The coronavirus pandemic has affected over 200 countries worldwide, finding an environment well-suited to its spread in cities as the heart of our civilization, as the meeting place for ideas, cultures and commercial exchanges. In these circumstances, prevention and control play a vital role, revealing the need to improve the current knowledge of users' perception of urban spaces and the way in which spaces are perceived and used. This work aims at investigating how the coronavirus emergency influenced perception of the surrounding spaces. In this regard, two questionnaire-based surveys were carried out on a sample of students from the School of Engineering of the Polytechnic University of Bari (Italy), one during the lockdown phase and one immediately after. Even after only a preliminary analysis, results showed some interesting patterns. They revealed, on the one hand, the expectations regarding possible changes, indicating places that are particularly important or symbolic for participants, and which are perceived to be missing, and on the other, the feelings of fear, worry and uncertainty with regard to the risk of contagion during post-lockdown access to and navigation through them. Nonetheless, some changes were considered positive, thus providing a strong indication of the expectations placed on future cities

Keywords

Spatial cognition; Covid emergency; Lockdown; Urban spaces.

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1. Introduction

The spatial dimension of planning is traditionally characterized by the concrete, structural, physical and physically perceived specificity of a confined space. The built environment, for example, finds an intrinsic, almost logical justifiability within this traditional interpretation, inherited from the first origin of spatial planning - residential settlements, neighbourhoods, cities (e.g. Geddes, 1915). This circumstance is historically evidenced by certain refined reflections on urban forms, urban fabrics and landmarks, used for example for semiotic, symbolic, identity and orientation characterization (Lynch, 1960; Rodwin, 1981). Yet, a decisive, almost fundamental contribution to spatial and particularly urban planning was instead provided by the need for spaces for services and socialization, whose degree of confinement is often achieved in a residual and/or occasional sense, through meadows, openings, natural squares, avenues, corridors, connectives etc. This need arose in purely functional terms, starting from the industrial cities of Northern Europe congested by the dramatic rhythms of the genetic industrial presence, and spreading to more historic cities devastated by unregulated residential growth, which challenged their surrounding natural environment (Jude Scott et al., 2002). Also, through this perhaps occasional, function-oriented opening perspective, a partial reinterpretation and a revaluation of the spatial dimension that characterizes planning, viewed also as extroverted, open and physically deconstructed, made its way. For a long time, this functional interpretation has been the main token of legitimization of unbuilt space, with an intentionally ancillary physiognomy, subordinated to a conceptualization of 'service' - urban, territorial, social.

Under the pressure of some contextual evolutions, especially of a social and environmental type, a new and widespread awareness of the characteristics of resilience and sustainability of the living conditions of human communities is constantly growing (Magnaghi, 2005; Newman & Jennings, 2012). The theme of the urban 'void' emerges with renewed interest, as an alternative to the more traditional urban 'full', as a value in itself not necessarily complemented by artificial elements of confinement. Eventually, progressive and specific analytical interests explored this characterization of the void, also through quantitative approaches, such as the well-known configurational analyses (Hillier, 2015; Cutini, 2001), or through richer and more complex aspects of spatial cognition, albeit often qualitative or quali-quantitative (e.g. algebras or spatial grammars: Freksa, 1991; Stiny & Mitchell, 1978).

These new reflections have opened up new analytical and modelling perspectives, ensuring more adequate emphasis on the management and characterization of space as a complex ontology. New modelling efforts have followed one another in a cognitive sense, of course first regarding confined spaces, characterized by the large and continuous presence and movement of navigating agents and/or users (Kuliga et al. 2019; Peponis et al., 2004). Hence, the interest has become more and more articulated and extended towards outdoor spaces, or towards open spaces or even spaces with extremely low population numbers, outside typical settlements (Mastrodonato et al., 2019). Clearly, these contexts have increasingly required similarly complex and refined forms of reflection, perhaps based on adequate IT tools to allow simulation models, as a necessary support for the evolution of the reflections themselves. Virtual reality environments have represented a new application frontier in this regard, together with other complex solutions (Montello et al., 2004; Frank et al., 2001). However, experiences have also shown some intrinsic limitations of these simulative settings, particularly in relation to the intrinsically and multi-dimensionally complex character of the space under investigation, whose simulation can only go through inevitably reductionist processes that often end up creating interpretative distortions and sometimes, therefore, bad decisions (Forester, 1984). Then it could be said that the degree of homothetic correspondence of a simulated environment with respect to the real environment represents a crucial feature for an effective simulation model. It is evident, however, that the knowledge derived from a long process of sedimentation of the aspects of the traditional dimensionality of space (the concrete, structural, physical and physically perceived ones) is more easily assimilated into

simulation models of analysis and interpretation of spaces. For instance, the classic multi-agent based virtual simulators are a contextual example (Frank et al., 2001). Yet research on ontologies applied to space, developed in recent times, has already shown the importance of classes and properties of not only structural or spatial - but also abstract (for example, temporal) nature. Among them, social, agentive elements and dynamics are defined as essential for constructing coherently representative ontologies of spatial concepts. And with them, the personality and behavioural properties of agents represent ontologically crucial characteristics (Borgo et al., 2017).

Therefore, the determination of these elements is essential, but it is not easy to elicit their forms and contents. In this context, the situational contingency of the Covid 19 emergency shows itself, if possible, as a somewhat privileged setting, from a perspective of analysis and research of said elements. The spatial cognition of knowledge agents forced in a home lockdown is certainly limited in its observation range and physical spatial relationship, but perhaps not in its imagination and evocation of and virtual relationship with the spaces themselves. The class exercise developed in a virtual classroom at the Polytechnic of Bari, during the spring of 2020 in the midst of a health emergency, is based on the above hypothesis. The simulation was carried out with students through multi-media questionnaires, with the aim of investigating aspects of cognition and representation of their living spaces – normally vague, perhaps implicit or even unconscious, incalculable in ordinary everyday life.

2. Planning in estate of exception

What we have said up to now takes on particular significance in a context such as that of the coronavirus pandemic. In such emergency conditions, the powers granted to planning authorities increase dramatically, legitimizing the copious production of detailed rules also referring to the use of spaces. In essence, decades of reflection on a way of governing spaces based on a horizontal rather than vertical organization seems to be irrelevant in such a condition. The impressive accounting of rules based on legal value and their instability over time, the segmentation of social categories and spaces attributed to particular uses by particular social categories identify modes of government that appears totally out of sync with the concept of governance as a relationship based on horizontal rather than vertical steering. In this way the effectiveness of this plethora of commands on individual and social behaviours, commands often cross-purpose, unstable and contradictory, is highly problematic.

The reference locality of this paper is that of the City, which, even today and despite the overwhelming phenomena of globalization, is conceived through the age-old opposition, loaded with political and legal connotations, between *urbs* and *civitas*, i.e. between the built environment and the community that inhabits it. This relationship is structurally unstable, skewed, dangerous, dysfunctional, in constant turmoil, and subjected to disciplinary projects which never reach complete fulfilment. Therefore, the relationship between society and space can never be posited in terms of rationality, be it the limited one of individuals or planners, or be it absolute or mitigated by the contamination of aesthetic values.

Looking at the problem from the point of view of those who must define space usage rules, a body of sociological literature, very rich but not discussed here, can be grouped according to two fundamental points of reference: the Foucauldian model and the model proposed by de Certeau. In both cases, command functions are not expressed through the vertical normative production of a centralized government, but through the microphysics of power, that is through the multi-scale and multi-local production of norms, often legally undefined, that characterize the so-called bio-politics; that is, the inclusion of living bodies and their spaces into the field of politics.

In the Foucauldian model, the microphysics of powers reaches a systemic effectiveness with a parallel reduction in the number of spaces assigned to the choice of individuals and groups. The result is a vision of

the *civitas* as a group of individuals and bodies that are often overdetermined, that is, endowed with only apparent freedoms. The old urban problem as a risky turmoil appears basically solved.

In de Certeau's alternative model, the *civitas* is capable of producing a myriad of behavioural inventions in contrast to the over-determinations and the microphysics of powers; capable of expressing an extraordinary creativity in terms of spatial uses, of the attribution of values to physical objects inserted in urban spaces that float disoriented, sometimes produced centuries ago and for radically different purposes. In this way, the urban turmoil remains in all its risky but fascinating creativity.

The paper tries to answer these questions through a questionnaire related to the use of urban environments, administered to a sample of Apulian university students.

3. A questionnaire for a case study

During the Covid-19 pandemic, an experiment was conducted with 150 students of the last year of the Territorial Engineering course of the Polytechnic of Bari. Each agent was given two questionnaires, the first during the lockdown period, the second immediately after the easing of restrictive measures. They were asked to freely choose a route in an urban environment, and to answer questions about their reactions and relationship towards various segments of the route itself. In the first questionnaire, relations with the environment are obviously imagined, given the confinement at home imposed by the rules; in the second case the chosen itinerary is tested.

The goal is to identify the spatial coordinates imagined and practiced by each agent in exceptional conditions and in an urban environment, and to capture any changes both in relation to the normality preceding the infection, and in relation to the loosening of restrictive measures.

This preliminary study takes into consideration the questionnaires completed by just one of these agents moving inside a large centre of the Bari hinterland, Bitonto, a city with over 60.00 inhabitants characterized by specialized olive and olive oil production. The path chosen by the agent is shown in the following image:



Fig. 1 Example of kmz file: track, photo snapshot and photo locations

Each of the 10 segments of the route has specific connotations linked to specific spatial forms structured in different times: from the peripheries of the twentieth century down to the medieval historical core; and each of these segments suggests various reactions from a formal, emotional and identity point of view.

Postponing to another occasion a detailed and differentiated analysis for each of the infra-urban spaces, it is possible, for now, to identify some basic characteristics of the responses to the questionnaires. The first one, sent out during the lockdown period, gives us a very strong feeling: the emotional character of the agent's relationship with space as well as a connotation of the physical elements as identitarian points of reference. An interesting index of this may be the word list used in the answers to the questionnaire, which completely overshadow any quantitative and formal assessment of the spaces both imagined and practiced.

In the following lines, we give an example of the answers to the first 2 questions relating to the restriction period, in which we highlight in bold the terms that seem significant to us:

A. Imagine you are looking around you: what would you like to see or what do you think you would see?

SECTION 0-1: I would like to go back to see people walking along this road and in particular to make eye contact with those acquaintances who, with a simple greeting or smile, were able to convey that feeling of freedom that is no longer there.

SECTION 1- 2: I finally see my grandparents

SECTION 2 – 3: The archaeological museum open

SECTION 3 – 4: I would like to see the crowded square

SECTION 4-5: I would like to see LED lighting across the square

SECTION 6-7: This area was re-evaluated and redesigned a few years ago, and I honestly think it doesn't need any further precautions.

SECTION 7- 8: I believe that at this intersection there must be a traffic regulation device since it has been subject to several drawbacks

SECTION 8-9: I expect a more enlightened place

SECTION 9-10: N/A

B. Do you think something has changed since the last time you went out? If not, why?

SECTION 0-1: I firmly believe that something has changed since the last time I went out and in particular I'm afraid of never finding again that usual feeling of light-heartedness; this virus has overturned our daily routine by undermining precisely that feeling of freedom that I mentioned earlier and that I am afraid of not feeling anymore.

SECTION 1- 2: Yes, because I see these locations differently after being alone for 2 months

SECTION 2- 3: I guess not, because I don't think there has been any change this period

SECTION 3- 4: I don't think anything has changed, because, when we are allowed to savour a little bit of freedom, we shall still be afraid of the consequences, and I think this square marked by the presence of the Carolino Obelisk will continue to be deserted.

SECTION 4- 5: I don't think anything has changed

SECTION 5 -6: I believe that the situation has always remained the same

SECTION 6 – 7: No

SECTION 7 – 8: No

SECTION 8 – 9: No

SECTION 9 – 10: N/A

The same operation can be conducted on the second questionnaire relating to the post-lockdown period, of which we report only the answers to the first question:

0. Look around, identify and briefly describe the place that surrounds you, through the characteristics you think most relevant

SECTION 0-1: I am in the vicinity of the cemetery, a place which is dark in its nature; there are few people walking about, there is certainly a different, cleaner air.

SECTION 1- 2: In this place there is a square populated by retired people who spend their time together. Further on there is a children's play area which is empty. It will certainly be the time of the day resulting in the scattered presence of people, but I perceive that people that desire to go out fear the consequences.

SECTION 2-3: In this central town square, more people walk about than in the previous sections. This place intersects with one of the best known streets in the city, Via Matteotti; here are several commercial stores, open.

SECTION 3- 4: Beautiful place, characterized by the grandeur of the Carolino Obelisk and the Basilica of the Saints Medici.

SECTION 4-5: This place is characterized by an area frequented by adults and children, Piazza Padre Pio, characterized by the statue of the Saint in the centre of the square.

SECTION 5-6: In this place we find a public garden, a leisure point par excellence for young and old. At this moment it is still closed, not allowing me to complete my experience after almost 2 months at home. Almost all commercial premises are already open.

SECTION 6-7: In this place we find the unique beauty of Torrione Angioino and Porta Baresana, more commonly called the "clock", since on top of the latter we find a huge clock that dictates time to the whole city. This is the place where the Immaculate Madonna appeared in 1734,

putting an end to the destruction of the city. From that time She was given the patronage of the city. Also in this area, we find the Aldo Moro square, home to the Bitonto nightlife.

SECTION 7- 8 This place is part of via Matteotti. There are quite a few people around, the street is quite busy.

SECTION 8-9 Place that does not have any particular characteristics.

SECTION 9-10 N/A

The obvious difference between the two questionnaires is the feeling of relief produced by the easing of the restrictions. On the other hand, the accentuation of the community, civil and emotional elements of the urban space is very strong in both questionnaires.

Elements of comparison between the two questionnaires can be obtained from the two series of answers to the same question, that relating to the three adjectives characterizing the places the agent went through:

Use three adjectives that you think characterize this place (separated by commas):

SECTIONS	DURING THE LOCKDOWN	AFTER THE LOCKDOWN
SECTION 0 - 1	security, adolescence, love	open, clean, free
SECTION 1 - 2	shootings, retirees, insecurity	long, fast, main
SECTION 2 - 3	quiet, cold, old	crowded, bright, safe
SECTION 3 - 4	crowded, sacred, illuminated	short, crowded, bright
SECTION 4 - 5	bright, crowded, safe	Safe, cleaned, bright
SECTION 5 - 6	leisure, safe, bright	imposing, safe, bright
SECTION 6 - 7	charming, central, crowded	central, fast, crowded
SECTION 7 - 8	insecure, busy, cold	short, fast, dark
SECTION 8 - 9	n/a	fast, short, comfortable
SECTION 9 - 10	n/a	n/a

Tab.1 Adjectives used to describe the same traits during and after the lockdown

In the transition to the opening phase, there is a clearer placement of adjectives of social character, prevailing in the shutdown phase, with adjectives with spatial connotations. The imagined city is above all the relational one, the practiced one is also a city of geometries and metric paths as well as physical qualities.

Venturing into some generalizations, it can be said that what emerges from this preliminary investigation is the resilience of itineraries of the identitarian and relational character attributed to the practiced spaces.

Here we list some toponyms loaded with this identitarian and relational meaning:

- old town;
- sea;
- park;
- theatre;
- bars / meeting places;
- churches;
- squares;
- meeting with friends / boyfriends / grandparents.

We should keep in mind that these words are distributed within narratives of itineraries, which, in a situation like this, eschew the functional geometric logic. The “shortest” path from A to B is not the straight line, i.e. the line traced through geometric rationality, but it is the one loaded with experiences of resocialization.

The most striking effect of the pandemic is the potential disconnection of the *urbs-civitas*, built environment/society relationship. The visual effect of unused urban spaces (think of the thousands of images of empty squares that have circulated online) is disorienting and to some extent fascinating.

The universally recognized basic characteristic of the Italian city, the square-dominated by the physical symbol of ecclesiastical power, the Cathedral, and by the physical symbol of civil power, the palaces of the people and nobility - has been profoundly re-signified by the urban crowds that consume goods and objects, but also build relations of mutual recognition and share culture.

The emptying of the square, in compliance with the exercise of exceptional power in times of Covid-19, is the celebration of the omnipotence of bio-politics. Is that a *potential* or *effective* omnipotence?

This question will be addressed through analysis of a larger and more detailed set of questionnaire answers, of which the one we used here is just an example.

4. Conclusions

From these short notes we can draw some interesting suggestions regarding the spatial dimension in our planning analyses, even in unusual and extreme conditions. In them, space seems to emerge not only as a structurally perceivable physical space, but also as a space represented and interpreted cognitively, relationally and socially.

We have seen that students (in lockdown) use the imagination to describe the space in an urban path in their city, and then repeat the same path in vivo, describing and commenting it in the post-lockdown situation. We have seen that the students talked about fears, darkness, light, people, relationships, friendships, chats, walks, socialization, both during lockdown and after the reopening. They represented space with dismay, uncertainty and then surprise and hope, explicitly selecting themes and objects aligned with these emotional perspectives. A concept of space emerged from it, emotionally eccentric and in many ways difficult to interpret operationally. Yet this is the space in the students' narratives, they have focused sporadically on the geometries, on the landmarks, on the sky, on the sea, the squares, the churches, the buildings, with little emphasis. The sample has certainly limits of assortment and statistical bias - which limit results and comments to a minimal subset - compared to the multifarious cognitive agents and users of urban spaces. With similar evidence, however, the picture seems to indicate a very precise role and importance of cognition, of personal and interpersonal conceptualization of spaces, rather than their external, physical, structural perception - which is more commonly followed by recent literature in design and planning (Ratti, 2004; Hillier & Penn 2004). The support of the imagination, of an imaginative creativity forced by an extreme event, seems to have emphasized radical socializing, relational needs as criteria for interaction with living spaces. Surely this is affected by conditions pertaining to an exceptional, atypical and (hopefully) unrepeatable situation. On the other hand, it certainly makes us reflect on how the rhetoric of constructions and buildings "on a human scale", of the "living comfort" of "modern spatiality", can sometimes be misleading, when the desperate basic need for open contact and company emerges, thus minimizing the need for built environments 'per se'. Certainly, this provides a validation of research outlooks supporting the central role of the agentive and relational dimension of spatial cognition in spatial planning.

Clearly, this circumstance seems to be rather encouraging from a desirable perspective of rebalancing the role of the spatial dimension in planning. It is also encouraging because it rises against the eminently physical, structural and constructivist perspective, guilty of much of the socially (and environmentally) unsustainable transformation of our cities.

Author's contribution

This paper results from a common research work carried out by authors, who have read and agreed to the published version of the manuscript. In this framework, G.Mastrodonato wrote sections 2 and 3, whereas D.Camarda wrote sections 1 and 4.

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