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Building bridges between theory and practice: A normative analysis of resilience

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Abstract: The paper contributes to the literature on addressing legal and socio-political matters and normatively analyses resilience to help build bridges to policy practices. In doing so, it responds to a current challenge scholars face in developing a theoretical framework covering a variety of dimensions. It looks into the subject in a multi-disciplinary way – addressing legal, socio-political and engineering aspects – also reflecting the profile of the research team.

Keywords: resilience; normative analysis; Greece.

I. Introduction

Modern cities are constantly in change due to a set of complex and interdependent problems such as global warming, overpopulation, public health issues, migration, financial crisis, marginalization, natural resources depletion and loss of biodiversity. Given this increasing and multifaceted pressure, the existing systems and the traditional structures are becoming more fragile to different shocks and stresses especially taking into consideration that by 2030 it is expected that 60% of the world's population will

live in cities (Gu et al., 2015). In order to offset the effects of multiple environmental, socio-political and financial shocks, it is essential to build up a regulatory framework to cope efficiently with the interconnected and evolving risks and disasters at urban landscape. The pillars of such a framework are "sustainability", focusing mainly on increasing the quality of life with respect to environmental, social and economic consideration both in the present and for future generations (Collier et al., 2013), and "resilience", highlighting the responsiveness of the systems to both extreme disturbances and persistent stress (Folke, 2016).

Despite their similar objectives and working principles, there is a systemic heterogeneity between them. Therefore, some scholars argue that resilience constitutes an integral part of the larger concept of sustainability (Ahern, 2013), others that sustainability is a contributing factor to resilience (Chapin et al., 2009; Saxena et al., 2016), whereas according to a third opinion, resilience consists of an improved term in comparison to sustainability (Vale, 2014). In addition, resilience and sustainability have been conceived as separate concepts with (sometimes) contrasting objectives (Fiksel, 2006) and no hierarchical relation between them (Hunt, 2009; Redman, 2014). For the aim of this paper, resilience and sustainability are perceived as close-related but distinctive concepts having a complementary relationship in order to ensure human well-being, social equity and environmental protection as well as to maintain system dynamics despite uncertainties, disturbances and nonlinear phenomena.

II. Normative framing and mapping of 'resilience'

Resilience can be defined as "*The ability of households, communities and nations to absorb and recover from shocks, whilst positively adapting and transforming their structures and means for living in the face of long-term stresses, change and uncertainty*" (Mitchell, 2013). Unpacking the concept of "resilience", in particular, parallel to the academic and policy discourse on the benefits of introducing resilience tools in cities, there is an emerging debate questioning the positive character of resilience (Elmqvist 2014, Cote and Nightingale 2012). Despite the fact that it is a prima facie positively tinted term, there are concerns about the geographical diversity, variety and unevenness of resilience and questions have been raised such as what kind of resilience and for whom (Pike, Dawley and Tomaney 2010). Namely, although resilience can be seen as the ability to return to normal or original state, how can this concept be implemented when such a return is undesirable in situation like poverty or dictatorship (Meerow, Newell and Stults 2016)? This is directly connected to the question of beneficiaries from resilient policy and actions, highlighting the need of paying attention to justice and fairness in relation to decision making processes and the distribution of benefits and burdens, when considering resilience (Davoudi et al, 2012).

Moreover, designing and enforcing resilience programmes may affect differently and possibly unequally different members of society and communities. Based on that, there are scholars who argue that 'resilience theory does not adequately address critical issues of power, voice and equity' (Friend and Moench 2013, 98) stressing that this concept might promote a neoliberal agenda (MacKinnon and Driscoll Derickson 2012; Friend and Moench 2013). The promotion of resilience in less advantaged communities entails danger as it regularises 'the uneven effects of neoliberal governance…' (MacKinnon and Driscoll Derickson 2012, 263), whereas in the context of discussing resilience and self-organisation, there is criticism when it is implied that self-reliance might sibstitute accountable governance (Davoudi 2012).

Reproducing unevenness while carrying out projects of urban resilience, jeopardises the future of cities' smooth economic, social and political development and functionability. Therefore, strategies towards resilient cities should include the less privileged groups as well as the people most affected in times of crisis (floods, earthquakes, migration, wildfires, poverty). In this context, normative analysis of resilience is directly related with the question of whose environments and livelihoods we seek to protect and why (Cote and Nightingale 2012, 485). Hence, priorities for investment reveal which portions of a city (and therefore which residents) the leadership views as needing the most attention at a time of crisis (Vale 2014). In Sri Lanka, for instance, following the devastating tsunami of December 2004 the government favoured construction of luxury coastal hotels, securely built of concrete, to replace rickety low-income fishing villages (Klein, 2007).

It is clear that urban planning, during the creation or expansion of cities, could substantially improve communities' preparedness and ability to recover from natural hazards or social and economic stresses as well as to strengthen their ability to diagnose, predict, and adapt (DesRoches and Taylor, 2018). According to the Multidisciplinary Center for Earthquake Engineering Research, the main properties which must have systems in order to be resilient are (Bruneau et al., 2003):

• Robustness: The ability to withstand a given level of stress or demand without degradation or loss of function

• Redundancy: The extent to which elements and components of a system are substitutable to satisfy functional requirements during a disruption

• Resourcefulness: Allocation of the appropriate budget and capacity to establish priorities and mobilize resources after an extreme event

• Rapidity: The ability to archive priorities and goals in time, in order to limit losses.

In this framework, New York constitutes a successful example of resilient city in the wake of the terrorist attack at 11th September of 2001, which caused huge disruption of the balance and normality of the life of city, the people, businesses, public and private institutions, community and volunteer groups, and other organizations, as it continued to be the foremost capitol of the national and global economy, and overall, a resilient city (Eisinger, 2007). On the other hand, in New Orleans only a 50% of the pre-Katrina population remains, large areas off the city sit vacant and there are communities which may never again be restored. It is, therefore, clear that New Orleans –due to the lack of resilience in its structures– did not have the capacity to adapt and rebound for this massive natural disaster (Colten, Kates and Laska, 2008).

Furthermore, various mechanisms of urban planning have been recently used to improve disaster resilience and have brought considerable positive results. Indicatively, in the island of Zakynthos in Greece the extensive antiseismic urban planning, which took place in the wake of catastrophic earthquakes of past years, was the reason that the island managed to be resilient during the most recent massive earthquake of 26th October 2018. As a result, the only harmful effects caused by this earthquake was some limited damages at the port of the island, which did not affect its normal activity. In addition to this, except from natural disasters or social shocks and financial crisis, it is important to be mentioned that resilient actions are manifested in multiple strategies to achieve people's wellbeing, enable access to services and retain their livelihoods in adverse circumstances. Namely, the Municipality of Trikala in Greece tackles more quickly and efficiently daily problems of their residents by implementing smart technology methods, such as e-complaint system. Namely, it is about an innovative tool through which citizens may send directly their complaints to the competent municipal authority. Since the beginning of the year, the municipality has received about 4,000 requests and comments, whereas about 10% of them came from a smartphone app released last year (The Guardian, 2018).

As regards boosting resilience into current legal and policy frameworks, this process involves: i. actively understanding the risk landscape and how it impacts on systems – how society functions in each context, ii. determining at which layer of society those risks are best managed and iii. applying a set of resilience principles to strengthen the system's capacity to absorb shocks or adapt and transform so that they are less exposed to shocks (Humbly, 2014). Briefly, resilience can be boosted by strengthening three areas: Absorptive capacity, adaptive capacity, transformative capacity: (OECD: GUIDELINES FOR RESILIENCE SYSTEMS ANALYSIS, 2014).

In the light of these requirements, the concept of adaptive law mechanisms has emerged. Given that the options to develop new legal instruments are limited (van Rijswick, 2012), an adaptive framework should be evolved enforcing initiatives, tools and actions to integrate resilience in the existing legal and

regulatory construct. In this context, the adaptive legal framework covers different aspects and field of intervention such as adaptive management (Karkkainen, 2003), adaptive planning, adaptive law and adaptive governance (Arnold, 2010). As regards the adaptive law, in particular, it encompasses (1) multiplicity of articulated goals; (2) polycentric, multimodal, and integrationist structure; (3) adaptive methods based on standards, flexibility and discretion and (4) iterative legal-pluralist process with feed-back loops, learning and accountability (Arnold and Gunderson, 2013).

Translating resilience requirements into practice constitutes a very challenging task due to the fact that adequate tools are still lacking. In this framework, it is essential to point out in which areas and to what extent there is an influx of resilient and adaptive elements in legal and policy framework related to urban environment. Namely, considering that a key factor of adaptive law is the change from a "front-end" to a "back-end" approach, special emphasis is given to the way information is incorporated into the environmental impact assessment procedures for new plans and projects. In line with resilience thinking, a "back-end" approach, and therefore an ongoing information flow into the running management process, is favoured over a single assessment before the activity has started. In addition, central element in EU Water Law relates to the introduction of mechanisms of adaptive management, such as transparent and flexible water licensing regimes, efficient demand-side management and monitoring mechanisms and "Climate-proof" River Basin Management Plans and Programmes of Measures, as a means to increase resilience to climate change.

Furthermore, a broad and effective public participation, including monitoring, learning and actual decision making, is the cornerstone for an adaptive regulatory and institutional system. Public participation constitutes a crucial aspect in strategies and policies concerning the improvement of administrative capacities, the empowerment of marginalized communities and citizens and the dissemination of relevant information. However, this trend towards resilience entails a weighting between the flexibility, which is inherent element of adaptive law, and certainty, which is integral part of the rule of law in governance (Ebbesson, 2010). Although flexibility and adaptability are the essential steps in order to cope with complex and unexpected changes, the notion of the rule of law sets the limits of this transition towards resilience requiring legal certainty and predictability.

III. Conclusion

In a world that is becoming profoundly urbanized, it is clear that cities can play a crucial role towards resilience embracing social, economic and environmental aspects of urban life and driving changes at the global level. By integrating a social and environmental dimension to urban development, in addition

to the conventionally considered economic dimension, cities and urban population will tackle more efficiently the constantly increasing pressures on well-being, such as pollution, inequalities, social unrest. Moreover, emphasis should be given to the enhancement of resilience and adaptation of legal and policy systems through polycentrism (Bell, 2011), multiple modes of action (multimodality) as well as increased roles for local and state governments (Arnold and Gunderson, 2014). Last but not least, in the process of adding and stabilizing the 'resilience' factor within urban planning, researchers and policy-makers need to focus on the transparency of social and political processes that need to take place in tandem with the restructuring of the living environments. Human agency needs to be in the epicentre of a 'resilient' and 'sustainable' long-term planning.

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Conflict of Interest

"The authors declare no conflict of interest".

No references for the short papers but hyperlinks within the text