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Open-source resilience: a connected commons-based proposition for urban transformation

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Abstract

In this paper we propose the concept of ‘open-source resilience’ as a promising path towards urban transformation and greater resilience. This proposition is investigated through the process of co-designing a digital platform, providing tools for actors engaging with resilience through urban commoning processes. Such tools will have the role of sustaining commoning projects and scaling them (up and wide) by facilitating processes of knowledge-sharing and networking. To illustrate the approach, we present outcomes and observations from an initial stage of the co-design process, which resulted in a first digital prototype.

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1. Background

The unprecedented environmental, social and economic challenges marking the 21st century have made it essential to search for ways of enhancing the resilience of cities and their inhabitants. It has been acknowledged that cities play a central role in the process of addressing the effects of climate change – arguably the most significant threat faced by our planet. Indeed, more than half of the world’s population lives in cities, a percentage that is expected to increase to 70% by 2050 [1]. Furthermore, world-wide, cities are responsible for almost 75% of the global resource consumption, while they account for more than 70% of energy-related global greenhouse gas emissions [2]. In this context and given the unknown and unpredictable effects of climate change [3] and the multiple and interlinked challenges of resource depletion, loss of welfare and financial crises, cities are now faced with a ‘resilience imperative’ [4].

The discourse of ‘resilience’, which broadly relates to the way in which societies adapt to externally imposed change [5] has indeed (re)gained prominence and popularity among the wider academic community, policy-makers and grassroots activist groups alike.

Resilience theory was first introduced in the 1960s-70s as an area of ‘new ecology’ [6]. Against a backdrop of environmental degradation, social movements, challenges to the US industrial power and monetary hegemony, and increased concerns about energy scarcity, the new ecology pointed to the failure of the Fordist-Keynesian regime of unrestricted growth [7]. The work of the American ecologist C.S. Holling, often regarded as the founder of modern ecological resilience thought [8], developed in this context. Essentially an adaptive resource management strategy, Holling’s resilience approach was concerned with the adaptive capacities of ecological systems under conditions of irreducible uncertainty [7]. Specifically, ecological resilience refers to “the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain the same function, structure, identity, and feedbacks” [9], p.2.

Subsequently, resilience has developed across disciplines, entering the mainstream academic discourse via the concept of ‘social-ecological resilience’, which places a focus on ‘socio-ecological systems’ and their capacity to handle disturbance whilst maintaining the capacity for adaptation, learning and transformation [10]. In the last few decades, the concept has been applied to various objects of study, from the built environment to individuals, social systems and communities [11], with definitions proliferating in many different fields, including physics, ecology, business studies, psychology, geography, social science urban and regional planning (for example, [12-16]).

This has led to a deeper understanding of the conditions required by complex socio-ecological systems to thrive with uncertainty and unpredictable change. In particular, ‘adaptive capacity’ and ‘transformation’ are two key concepts within this interpretation of resilience. The capacity to learn from, and store, lessons from past disruptions and experiences, and the ability to prepare for, and adapt to, uncertainty and change, are important aspects for building adaptive capacity [8]. Transformation entails a more radical path than adaptation, which refers to system shifts that occur when the current system is no longer desirable [17]. Preparedness to change, options to change and the capacity to change are considered prerequisites for transformation, forming a social-ecological system’s potential for change.

With its emphasis on adaptation, flexibility and functional continuity, resilience has fast become “a pervasive idiom of global governance” [18], p.144, entering the discourse and structuring policy and practice at different levels. For example, the resilience discourse has been adopted by major international development, research and policy institutions, such as UN (Resilient People, Resilient Planet, [19]). More recently, the policy discourse on resilience has shifted from the idea of mitigation to adaptation to climate change [7]. European Union (EU) directives tend to consider resilience mainly from technological and environmental perspectives (e.g., Policy on Critical Information Infrastructure Protection, CIIP; Water Framework Directive) with little emphasis on social, cultural and political dimensions [20] or the ‘bottom-up’ perspective [21]. This policy framework has prompted research in the area of engineering solutions that tackle ‘emergency’ aspects rather than ‘empowerment’ aspects of resilience processes [11].

The resilience discourse has also been adopted at the national and local policy levels, particularly in the context of the recession that followed the global economic crisis of 2008. In parallel with promoting sustained austerity measures, some governments have started to recognize the essential role of community empowerment in the economy of crisis and promote supporting policies, such as those advanced under the Big Society flagship programme of the UK government [22]. ‘Community resilience’ in these policies focuses on community self-reliance and empowerment, by reducing the state contribution and encouraging volunteering and community activity (e.g., the Strategic National Framework on Community Resilience, [23]).

This proliferation of resilience work in the last decade, both within academia and the wider policy arena, has led to questions regarding the political and economic ideologies involved in shaping resilience discourses [8]. Indeed, despite the widespread use of the concept of resilience across a range of disciplines and policy sectors, it remains significantly under-theorized in terms of power, conflict, contradiction and culture [20, 24]. Resilience has been put forward as a politically neutral term, which maintains the rhetoric of criticality in terms of what practices are ‘bad’ or unsustainable, and offers technocratic (adaptive management) solutions, arguably framed within, and using the pervasive capitalist logic and vocabulary [19]. Mainstream discussions of resilience are seen therefore to mask how the concept reinforces and perpetuates hegemonic values and discourse [8].

Resilience theory is thus argued to offer a scientific vocabulary for market-based approaches to climate change, particularly by framing adaptive change in terms of ‘leveraging’ social and natural capital [7]. Furthermore, by

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