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Of resilient places: planning for urban resilience

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ABSTRACT
This paper argues that resilience of a place cannot necessarily be associated only with the level of its vulnerability to the environment or security. A place-based perspective to resilience helps understand the capacity of communities to withstand or adapt with change. Resilience of a place does not only refer to contingencies—such as formulating immediate responses to crisis situations or incidents such as earthquakes, floods or other disasters in vulnerable areas—but also considers long-term mitigation and adaptation strategies to face social, economic and environmental challenges. To this purpose, the paper applies an evolutionary resilience framework to the case of Transition towns in the UK as resilient places in terms of their capacity for learning, robustness, ability to innovate and adaptability to change. In conclusion, socially innovative actions and initiatives are found to be a primary source of resilience through bottom-up creativity among communities and stakeholders to help improve social relations, support socio-political empowerment and fulfil the basic needs of the people.

1. Introduction and background

With wider use of the term in policy, practice and planning, resilience is increasingly seen in academic debates as a contested concept (MacKinnon & Derickson, 2013). Acknowledging this intellectual disquiet, Vale (2014) claims that in contrast with "sustainable" and "developmental" discourses that offer relatively vague notions of commitment, continuation and sustenance in urban living, resilience thinking adds a strategic meaning to the sense of safety, security and protection from potential threats to society, economy and the environment. In fact, as this paper argues, resilience as a concept and approach encompasses much more than mere responsiveness or readiness for the crises. In planning theory and practice, resilience thinking has been invoked to analyse the relationships between communities and the environment (Wilkinson, 2012). Cities within a resilience framework are seen as complex adaptive systems. This helps consider the interdependence between communities and the environment—among many other subsystems—in which cultural and social relations play as important a role as do the local ecology and habitat. The relationship between these social and ecological systems is seen through

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the effectiveness of public policy and governance, adaptive capacity of the communities, and the role of nature and the benefits it offers in terms of ecosystems services, etc. (De Groot et al., 2002; Walker & Salt, 2012). This relationship can help planners and policy-makers to take into account the place-based effects of social, economic and environmental changes in both the immediate and the longer terms. There have been some attempts from the perspective of innovation systems looking at the local and regional potentials for creativity and change (Moulaert & Sekia, 2003; Moulaert & Mehmood, 2010). Notable approaches in this respect include evolutionary views on the territorial dimensions of transition, resilience, innovation and multilevel governance as inter-related complex adaptive systems characterized by a certain degree of self-organization and emergence (Cooke, 2012; Cooke et al., 2012). However, much of this body of knowledge has largely paid attention to regional competitiveness as the main driver of social and economic resilience for other spatial scales (Melkas & Uotila, 2013; Uyarra & Flanagan, 2013). More consideration is therefore needed for the role of local actors and communities in determining the form and character of their localities. In this respect, this paper addresses two general questions using the case of Transition towns as outcomes of a socio-ecological movement in the UK: how can resilience thinking help communities to shape their social and ecological environment in a world of limited resources? and how do places play a role in shaping, mitigating and/or mediating change mechanisms?

The evolution of resilience thinking in the UK urban planning can be traced back to the contemporary notions of "urban renaissance" (Urban Task Force, 1999), which started and continued in the decades preceding the late twentieth and early twenty-first centuries only to be disrupted by the 2007–2008 global financial crisis. This urban renaissance was strengthened by the complex developments in the wake of strong growth and high national spending under the New Labour reforms synthesizing the path in-between socialism and capitalism as the Third Way (Giddens, 1998), to mark a radical shift in the post-Thatcherism era. It also prompted many small and medium-sized towns and cities as engines of creativity, innovation and growth. In the process, new retail districts, public squares, high-end apartment blocks and statement structures were constructed, also promoting physical proximity of different social, economic and ethnic groups in urban areas (Jones & Mean, 2010). Many of the towns and cities with past industrial heritage were put through massive regeneration, redevelopment and gentrification during this period (Cameron, 2003). The financial crisis and subsequent recessionary period however exposed a new scale of issues in the UK cities arising from the urban renaissance (Martin, 2011). As in the case of the housing bubble, a study by the Commission for the Built Environment termed it a toxic housing boom during which 53% housing estates built had serious shortcomings whereas 29% of these should not have received planning permission in the first place (Simmons, 2009). The crisis also revealed how the so-called urban renaissance period actually contributed to the segregation between different communities and income groups especially in the use of public services, public spaces, shops and schools. Moreover, UK cities continued to be ranked poorly on urban sustainability, environment and quality of life in Europe and other OECD countries (Mercer, 2015). Many regenerated city centres had lesser regard to the local identity and environment, exhibiting similarity of physical appearance across the country with more or less same high street vendors, shops and stores that transformed the respective urban individual and historic characters, making the cities appear as, what New Economics

Foundation termed, "clone towns" (NEF, 2005). Subsequently, urban public spaces were increasingly transformed to serve as disciplinary mechanisms and schemes for socially selective controls such as town-centre management, policing and CCTV use. At the institutional level, the legislative framework of Civil Contingencies Act 2004 required all urban, regional and national agencies in the UK to maintain emergency planning measures in order to cope with serious emergencies for civil protection (Walker & Broderick, 2006). Resilience forums and partnerships were created across the country to ensure a coordinated institutional effort. However, most of the plans were confined to the Prepare–Plan–Respond–Recover model of resilience largely based on emergency planning and recovery approaches that strive for "preparing" for potential crisis situations, "planning" measures for such contingencies, "responding" in time to such situations and "recovering" the urban systems back into their original state (GLA, 2010). This model, however, has been criticized for being too linear, less proactive and for its objectives to maintain a state of equilibrium (Davoudi et al., 2011).

The fiscal crisis of 2007–2008 inflicted significant repercussions on the society and economy not least in terms of the housing bubble. To recover from the long-term recession and shocks that followed the crisis, a Comprehensive Spending Review was commissioned in 2010 by the new coalition government comprising Conservatives and Liberal Democrats. The Con-Dem alliance subsequently opted for austerity measures that largely focused on efficiency savings and cuts in public sector funding (O'Hara, 2014). It also put forward its Big Society agenda through the Localism Bill to reform the public sector, empower communities and promote philanthropic action. Among the earliest casualties of the 2010 cull were hundreds of quangos (semi-autonomous public bodies dependent on government support) many of which were critical to community development (such as Regional Development Agencies) (Walker, 2014). This followed reduced support and commitments for sustainability actions such as eco-towns from the previous government (CLG, 2010). The Big Society discourse itself fell out of favour in the wake of government's own reductions in public sector investments to support private sector growth (Civil Exchange, 2015). Throughout the period of crises and cutbacks, Transition towns continued to flourish as localized responses through community actions to recover from austerity cuts, strengthen community collaborations and sustain grassroots cooperative spirit. Hence besides helping build resilient places, the movement in its course proved resilient and stood the test of time.

This paper revisits the resilience thinking in academic literature and looks at the case of the Transition movement in the UK as a bottom-up initiative to help transform villages, towns and cities as resilient places. In the discussion below, Section 2 starts with an overview of resilience thinking and its multidisciplinary implications. It synthesizes the concept of evolutionary resilience based on the framework by Davoudi et al. (2013), which offers a four-pronged schema as an alternative to the conventional emergency planning discourses, for analysing the role of evolutionary resilience in an urban environment. These include the capacity for learning (preparedness), being robust (persistence), being innovative (transformability) and being flexible (adaptability) in the face of a crisis or potential change. Based on these criteria Section 3 discusses the popularity and spread of Transition towns in the UK and around the globe. The movement was initially shaped on the concerns about the peak oil crisis followed by the awareness about the climate change impacts. Subsequently, it incorporated the need to mitigate the effects of economic

austerity in the face of financial crisis. In conclusion, key features of resilient urban places are mentioned and their implications discussed in terms of innovations in social relations, bottom-up creativity and socio-political empowerment of the communities.

2. Evolution of resilience thinking

Resilience is fast becoming a ubiquitous (and equally contested) concept in the contemporary planning and policy discussions, and practice. It is often associated with the notion of resisting any change and bouncing back to the initial state. In emergency planning, it is synonymous with security measures and responses to shocks and risks such as severe weather and pandemics, as in the case of Resilience Forums in the UK. However, the idea of restoration to a past state of existence following a crisis or trauma is misleading. This is evident from a number of paradigms in existence on resilience thinking as elaborated by Jones and Mean (2010). First is the notion of equilibrium which assumes that people (communities) and nature (ecosystems) respond in a sequential and predictable manner to the disturbances, such as change in the environment. Second is the non-equilibrium approach that considers the role of external elements such as climatic variability and episodic events to the effect that responses from society and nature are less predictable in the face of disturbance and change (change as a new constant). Yet, a third view considers the evolutionary and integrating role of society and nature in preventing adverse changes before ecological thresholds are reached, while building, maintaining or enhancing the resilience of the respective social and ecological systems.

The debates in resilience thinking also reflect the evolving nature of the concept and how it has been adopted in various fields of knowledge such as engineering and ecological and social sciences. Resilience in engineering terms is often seen as the property of a material (elasticity) to retain its original form (bouncing back) after being subjected to temporary stress. Engineering resilience is therefore defined as the amount of disturbance or time to recover back into equilibrium following a disturbance (Gunderson, 2009). In the ecological terms of a change mechanism, Holling (1973) applied the concept of resilience to explain the behaviour of biological organisms in bounded ecosystems. Ecological resilience from this perspective is defined as "the persistence of relationships within a system and […] the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist" (Holling, 1973, p. 17). Ecological and engineering aspects of resilience as two distinct characteristics help determine whether an ecosystem could return to a prior state or transform into a different but stable state. Whereas engineering resilience gives the optimal design features in which an entity could recover back into its original form after a certain level of disturbance, ecological resilience explains the situation of multiple equilibria in which a system could adapt to the change by bouncing forth into a slightly different form (Davoudi *et al.*, 2013). The multiple states of equilibrium imply that change could only occur periodically (punctuated equilibrium), and in a series of stable states as a response to the episodic shocks (Simmie & Martin, 2010). This equilibrium view however does not satisfy the concerns for the cities that are strongly subject to their intimate environment (e.g. in the vicinity of mountainous areas, deserts or coastal zones) but also unstable natural environments facing constant threat from earthquakes, tsunamis and volcanic eruptions. Such concerns require more active engagement of local communities and groups in the planning process. Enter "social resilience" which

is used to describe "the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change" (Adger, 2000, p. 347). Empirical work in social resilience can be grouped into three broader areas: prevention from natural disasters; management of natural resources; and social and institutional change largely based on the approach to prevention, preparation and responding to shocks (Keck & Sakdapolrak, 2013). This reactive view is closer to the emergency planning measures that are often associated with the arguments based on building the Resilience Forums in the UK which prioritize bringing together public safety institutions such as fire, health, police, etc. However, it overlooks the adaptive capacity of the communities and self-regulatory nature of socio-political systems of a city in which communities self-organize and recover from shocks through reproduction of social capital and social innovations (Moulaert et al., 2007; Vale, 2014; Baker & Mehmood, 2015).

As regards the relationship of social resilience with its engineering and ecological counterparts, unlike engineering, social resilience is seen more as a process than an individual characteristic. The aspects of social resilience and ecological resilience however are not mutually exclusive, and can be looked at in conjunction, instead of focusing independently or considering one as a subset of the other (Berkes et al., 2003; Adger et al., 2005). The connection between the approaches to social and ecological resilience has been particularly useful in understanding the issues faced by those communities that depend on contiguous environmental resources for ecosystems services (Adger et al., 2005) as well as those under threat from natural events as mentioned above. It also allows for examining the role of innovation, adaptability and transformability in complex social and ecological systems with interdependent relationships between humans and the environment (Folke et al., 2010). Socio-ecological resilience therefore has come to be accepted as a key aspect of those complex adaptive systems that feature a certain degree of self-organization and learning. It is evolutionary in nature (Simmie & Martin, 2010; Davoudi et al., 2013) and, based on the arguments posed by Adger (2000) and Young et al. (2006), can be understood as the relationship of the socio-economic systems with the biophysical environment that takes into account the role of social and economic institutions (both formal and informal) especially in response to the external shocks and internal pressures related to the social, political and economic change and resource utilization. The approach has been used to make the case for acknowledging the importance of human–environment interdependence in the sustainable development agenda (Folke et al., 2002). The integrated aspect of social and ecological resilience is also used to describe hazard prevention as an opportunity for the local communities and groups in the face of uncertainty (McEvoy, Fünfgeld, & Bosomworth, 2013).

The twenty-first century's focus of evolutionary resilience (Davoudi et al., 2013) in the linking of social and ecological systems has also been successful in attracting the attention of politicians and policy-makers into considering human societies in relation with their environments. It rejects the "emergency planning" and "shock therapy" perception of resilience thinking as a reactive measure to prevent from, prepare for as well as respond to and recover back from the situations of crises (Davoudi et al., 2011). It addresses the shortfalls of standalone approaches to all three (engineering, ecological and social) types of resilience. In fact, it provides an overarching view by helping to understand the interdependence between the individual traits (engineering), process-oriented dimension (social) and the ability to resuscitate a system (ecological).

3. Resilience of a place

Resilience thinking has prevailed in many of the historic discourses in urban planning theory and practice, particularly in the approaches to spatial equilibrium, which is closer to the concept of engineering resilience. As it happens, the will to order space was a key contention to design and transform cities on geometrical and functional bases under the modernist manifesto put forward by the Charter of Athens in 1933 (Davoudi, 2012). Cities of the eighteenth and nineteenth centuries in this respect were termed as chaotic with informal, disorderly and uncontrolled growth and expansion (Sert, 1944). A neat and orderly urban area was therefore seen as an ideal type of a good city that would reflect a state of equilibrium in all functions. This equilibrium state would be achieved through the power of plan-making with emphasis on "improving physical accessibility, developing complementary functions between geographically prox-imate places, and privileging nearby relations over distant networks" (Davoudi, 2012, p. 433). So, an ideal type city in that case would be regarded as resilient and resourceful, which would maintain its status quo as perceived by the planners. MacKinnon and Derick-son (2013) favour the notion of resourcefulness as opposed to resilience. However, this stance overlooks the process dimension of resilience and only seems to consider resilience as a specific state that is achieved by means of other processes. Resourcefulness, as evident from the case of Transition towns below, is rather a precondition for place resilience. Vale (2014) agrees to resilience being a problematic yet promising concept in city planning. To him resilience cannot be systemically applied as a homogenous state or situation in a city. It can be uneven across a city with respect to the various social, political and economic vulnerabilities as associated with different communities. He advocates a more inclusive and multidisciplinary notion of progressive resilience with a stronger social dimension especially focusing on the disadvantaged and vulnerable groups and communities in a city.

More contemporary approaches in planning theory and practice have stressed the need for considering urban ecosystems especially through the role of human–nature relations (socio-ecological resilience), a dimension that has often been overlooked by planners. Resilience thinking in this respect is seen as an interdisciplinary approach to help face the challenge of planning for complex socio-ecological systems (Wilkinson, 2012). Looking at cities as complex adaptive systems, these planning approaches aim to bridge the social, environmental and economic aspects of resilience in spatial planning. Three views are of particular interest here. The first view is offered by Peter Newman and col-leagues who consider urban resilience as a response to the peak oil crisis and global climate change associated with fossil fuel dependence and subsequent greenhouse gas emissions (Newman et al., 2009). Their vision of a resilient city is based on transit-oriented development, smart infrastructure, local foods and pedestrianization as reflected in the many new eco-efficient urban dwellings such as eco-cities and eco-towns. While pertinent for building new resilient settlements, this vision falls short of addressing the challenges of transforming/retrofitting the existing building stock and infrastructure in the urban areas. This shortfall is already addressed in the working of the Transition towns that strive for local resilience by improving the existing urban infrastructure and making use of the local social, economic and environmental resources. The second view emphasizes a radical discourse in urban planning. "Strategic navigation" is offered by Hillier (2011) as a way forward to strategize spatial planning through resilience thinking. This helps

explore new ways of conceptualizing and practising planning in conditions of uncertainty. Hence, instead of assuming stability and explaining change as a freak occurrence, resilience planning would stress the importance of assuming the change and explaining stability. This view understands the fact that planning theory and practice require active adaptation by not only responding to the changing contexts and circumstances, but also creating and shaping change. Strategic navigation, as a process, is sensitive to complexity and indeterminacy through which strategic spatial planning operates adaptively to develop more resilient cities. A third, more comprehensive, approach is offered by Davoudi *et al.* (2013) as an evolutionary resilience framework composed of a dynamic interplay between Transformability, Adaptability, Preparedness and Persistence (TAPP), across multiple scales and timeframes. A place, within this framework, may become more or less resilient depending on how the learning capacity of the communities helps prepare them for situations of crisis or uncertainty by being persistent, facing possible disruption by adapting to the change and progressing into a new state through innovation and transformation. This framework reflects the intentionality of human intervention in the face of potential crisis and helps in recovering from shocks, cultivating preparedness and seeking potential transformative opportunities that emerge from the change in an iterative manner, as evident from the Transition movement.

Urban resilience therefore can be defined in evolutionary terms as a proactive rather than reactive view to planning, policy-making and strategic steering in which communities play a vital role for resilient place shaping through their capacity for active learning, robustness, ability to innovate and adaptability to change. This is reflected in the case of Transition towns that have emerged as a revivalist movement in the wake of increasing community awareness about fossil fuel dependence, the changing climate, financial crises and subsequent austerity cuts.

4. Transition towns as resilient places

Transition towns offer a bottom-up approach for local development with emphasis on a shift from sustainability to resilience (Hopkins, 2012; Mehmood & Franklin, 2013). Organized through Transition Network as a charity, the movement aims to "inspire, encourage, connect, support and train communities as they self-organise around the Transition model, creating initiatives that rebuild resilience and reduce CO2 emissions" (Transition Network, 2010). The movement started in 2005 with a permaculture coursework assignment to prepare an Energy Descent Action Plan for the small coastal fishing town of Kinsale in Ireland (Hopkins, 2005). The aim was to produce an action plan for a low-energy living with 25% of fossil fuel reserves in the event of peak oil crisis. It was prepared by the students at Kinsale Further Education College and supervised by their module teacher Rob Hopkins who later became founder of the Transition Network. The action plan took account of the concerns expressed by the local communities, and received full support from the town council. The movement took a further step when Rob Hopkins moved to Totnes in South West England in 2005 and founded the Transition Town Totnes in 2006 at a time when urban renaissance in the UK was at full swing. The concern from here on was to take the dual challenges of peak oil and climate change head-on by making use of community strengths and local resources. Totnes, despite suffering from low wages, higher house prices and an ageing population like many other

market towns in the UK at the time, had largely managed to avoid the clone town sensation (Hopkins, 2008). So it was only natural that the town embraced the Transition model and managed its transition into post-carbon living. This gave a new lease of life to the town and its communities such that many other towns rapidly started adopting the Transition culture. Totnes made a number of lifestyle choices through a range of community events and specialist groups bringing together people who had interest or expertise in community gardening, organic food, health and medicine, renewable energy, building and housing, arts and craft, etc. It also experimented with relocalization of the economy through a local exchange trading system (LETS) such as the Totnes Pound in collaboration with local businesses. All these actions had common objectives of reducing fossil fuel dependency, improving local resilience and transitioning into a sustainable and healthy lifestyle for local communities with a minimum carbon footprint (Hopkins, 2010). This range of actions, experiments and initiatives would not have been possible without a clear future-oriented approach that was offered by the Transition Initiative. Similarly, it was also the willingness and motivation of local activists, council leadership and the communities who embraced the ideology and realized the need for a radical change.

The Transition movement can be termed as one of the most impressive bottom-up transnational initiatives today. Although started in small suburban towns such as Kinsale, Lampeter and Totnes, the movement has been embraced around the globe at the scales of villages, hamlets, boroughs and cities as well as valleys, peninsulas and islands (Hopkins, 2008). As of November 2014, there were 410 Transition Initiatives in the UK, of which 190 were Muller (i.e. "mulling over" or in the process of setting up a Transition Initiative). In all, there were 1196 Transition Initiatives around the world of which 702 were Muller Initiatives (Transition Network, 2014). The movement was primarily based on two potential global challenges of the time: first, the concern about the declining global fossil fuel reserves with the increasing consumption; and, second, about the greenhouse gas emission with the impending climate change. Subsequently, the global fiscal crisis added to the concerns about the economic resilience of cities and communities. To face these and other more localized challenges, the movement encourages and offers support and training to the communities to plan for their future in the longer term; improve resilience to withstand social, economic and environmental changes; and harness the spirit of collective action. The Transition Network website is a community hub that offers step-by-step guidance to building a Transition Initiative from scratch (https://www.transitionnetwork.org/support). Over the last few years, the Transition Network has also produced a number of publications, toolkits and blogs to help the striving towns adopt the Transition thinking. Among the key publications, the Transition Handbook (Hopkins, 2008) offers a brief history and context of the concept and its development; The Transition Timeline (Chamberlain, 2009) sets a roadmap with visions and scenarios for actions related to food, energy, demographics, transport and health care through collective effort. Local Food (Pinkerton & Hopkins, 2009) gives guidance on building resilient local food networks through collaborative and community-based food initiatives; and Local Money (North, 2010) elaborates Peter North's observations from around the world on various models of alternative LETSs such as TimeBanks and local currencies.

The implications of the Transition movement in terms of its contribution towards enhancing local socio-ecological resilience can be understood from the four components

of the evolutionary resilience framework based on TAPP proposed by Davoudi *et al.* (2013), as below.

Transformability and innovation, according to Davoudi *et al.* (2013), require a fair amount of behavioural change. Scott-Cato and Hillier (2010) have analysed the aspects of social and behavioural change in Transition towns through the concept of social innovation. They emphasize the specific focus of social innovation theory and practice in helping to bring about social and behavioural change in the communities. Key contentions of the Transition movement about climate change, peak oil and community-led economic development emphasize place-based transformations by means of improving social relations between groups and communities, empowering the people in terms of socio-political decision-making and satisfying basic human needs (Mehmood & Parra, 2013).

Adaptability or the ability of being flexible in the face of a crisis or change refers to two distinctive features of the Transition movement that make it a model of local resilience. First is the predominant focus on the sense of community building. Internally, the community rhetoric and spirit helps in forming a cohesive relationship and identity whereas externally, it helps in contributing to building alliances and networks to produce projects of wider societal benefits. A key achievement in this respect is the movement's role in low-carbon transitions across the board in Transition towns (Aiken, 2012). The second distinctive feature is its focus on localization of social and economic processes and activities. Not only does this help explore the potential of smaller towns and cities to sustain their lifestyles but also allows for inter-scalar linkages and helps building networks with other towns of varying social, economic, cultural and environmental assets bases. These have subsequently provided inspiration for the concept of green networks of cities (Taylor, 2012).

Preparedness refers to increasing the learning capacity of the communities through knowledge exchange and sharing mutual experiences. The Transition movement offers an alternative model of local development that provides opportunities to build resilient communities (Connors & McDonald, 2011). One of the key contributions of the movement is establishing such governance mechanisms that are based on participatory democracy promoting bottom-up creativity through self-organizing community groups (Bay, 2013). A key step in this respect is learning from the past experiences and making efforts to improve the situation of people. The movement's initiator Rob Hopkins (2008) has acknowledged his inspiration from smaller communities such as those living in remote mountainous areas of northern Pakistan making use of locally available social, human, cultural and environmental resources.

And finally, the fourth component of Persistence relates to a characteristic feature of being robust. Considering the city as a socio-ecological system, the very essence of resilience thinking is to increase the system's ability to persist in the face of crises or external shocks. With the Transition movement based on finding alternative courses of action to the limited resources and the changing social, economic and ecological environment persistence is a recurring aspect to face such obstacles. The Transition Network regularly produces publications, organizes citizens' meetings and promotes dialogue through community events to provide an opportunity for network members to discuss experiences of successfully facing various obstacles in the course of achieving their objectives (Amanda, 2011). With the expansion of the network the sense of community has also strengthened through building the social, cultural and human capitals to persist in

situations of unfavourable circumstances. This has subsequently contributed to strengthening the sense of social and environmental citizenship in all walks of life and across the age groups especially in the wake of social, political and institutional barriers to locally driven initiatives (Merritt & Stubbs, 2012).

5. Conclusion

This paper set out to look at how resilience thinking can help plan and shape resilient places in a situation of finite means, and how these change mechanisms can be mediated. Resilience is not just about economy and environment but also society and culture. It does not merely refer to readiness to the surprise or isolated occurrences but also refers to long-term strategies to mitigate and adapt to socio-economic as well as environmental challenges. In a world of limited resources, resilience thinking can help integrate the issues of social, economic and environmental well-being by strategically navigating the policy and planning to proactively create, assume and shape change. A place-based perspective helps in locating the territorial dimension that mediates this change by identifying the cities as complex adaptive systems. The Transition movement as discussed above reflects the place-based response to the issues of global impact. The movement timely anticipated the situation of crisis as in the case of peak oil concerns; it also infused a sense of preparedness to the impending global crises as in the situation of climate change; and then realigned itself to respond to the emerging issues that resulted from the case of global financial meltdown. Not only that, it also helped communities in jointly formulating visions and strategies to cope with the global situations at local levels through the help of local institutions such as local businesses, community groups and town councils. In this sense, not only do the Transition towns share a model of resilience thinking in everyday life, but the movement itself has also shown its resilience in the face of changing local and global social, economic and ecological challenges.

More specifically, the Transition movement became successful in the post-urban renaissance UK due to its encompassing stance towards social, economic and environmental well-being. This exemplifies the ways that resilience thinking can help with planning and shaping cities. The complex adaptive systems view within resilience thinking also helps in looking at communities and places as subsystems that can intertwine to formulate, adapt or even mitigate and mediate the change mechanisms. Transition towns as resilient settlements present a place-based perspective to the capacity for learning (preparedness), being robust (persistence), being innovative (transformability) and being flexible (adaptability) in the face of a crisis or change both immediately and in the long term. There is evidence supporting the fact that crisis situations can play a role in shaping new innovation trajectories (Bessant et al., 2012). Extreme conditions with the absence of common-sense solutions and first-option alternatives can lead to the search for radical innovations. Innovation in the social sense (social innovation) can therefore help identify new ways to produce and support social change and foster understanding of the conditions that provide solutions to complex social and ecological problems (Moulaert et al., 2013). It can also deepen our understanding of the dynamics that drive both continuity and change, including at the societal level, and how and under what conditions the change can successfully arise and diffuse, transforming social relations and empowering local communities to help satisfy the basic human needs.

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