

Resilient communities: transitions, pathways and resourcefulness

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This is a Review Essay. It uses as a starting point ideas from the recent book by Geoff A Wilson, *Community resilience and environmental transitions*, to develop arguments about the nature of work by geographers on the resilience of human communities. It considers the legacy of ideas about resilience derived from ecology and engineering, whilst noting a third interpretation relating to adaptive resilience and the contribution of work from psychology on resilience in individuals. The Review addresses the notion of 'community capital', considering how ideas from Pierre Bourdieu have been extended in the past two decades, including attempts to measure various capitals. Scale effects of resilience are examined as is the development of theory linking multi-functionality and resilience. Related work on adaptability and transition pathways are also addressed as are contributions on the resilience of cities and regions. The Review concludes by presenting critiques of some of the work on resilience, whilst referring to potential alternatives and potentially fruitful future lines of inquiry.

KEY WORDS: community, resilience, pathways, capitals, resourcefulness

In a recent book, *Community resilience and environmental transitions*, Geoff Wilson (2012) acknowledged the recent plethora of research on the resilience of human communities, emphasising three particular areas of investigation. These are theory relating to processes, drivers and indicators of social resilience; possible inter-linkages between community resilience and various forms of human and environmental capital; and resilience in the face of socio-political and economic change as opposed to responses to natural catastrophes. This review article draws upon Wilson's work, summarising key literature across these three areas, and discussing research on indicators of resilience, recognition of resilience at different spatial scales, and pathways to resilience. It evaluates work on resilience in various disciplines, noting seminal contributions from ecology and psychology before addressing the notion of community 'capitals' and what constitutes community resilience. Issues pertaining to multi-functionality and scale, the importance of flexibility and the nature of transitions in development pathways are then addressed, including reference to work on the resilience of cities and regions. The paper concludes

with a critique of community resilience as a concept.

Resilience in human and ecological systems

The concept of resilience originates in physics, mathematics and ecology. In the former two disciplines it refers to the ability of a system or material to recover its shape after encountering a displacement or disturbance (Norris *et al.* 2008), such as being bent, compressed or stretched. The Canadian ecologist C. S. Holling (1973) introduced the concept to describe the persistence of natural systems in the face of significant change, such as fires, floods and human interventions (Folke 2006; Maguire and Hogan 2007). Subsequently two key ideas have developed about resilience within ecology. One, termed engineering resilience, focuses on the time taken for a system to return to equilibrium or steady state after a shock (Gunderson 2000) and the second, termed ecological resilience, refers to a system's capacity to reorganise under change to reach a new equilibrium whilst retaining the same essential functions (Holling 2001).

Given the impacts of human activity upon ecosystems it is not surprising that there has been substantial research on ecosystem resilience. However, for at least 20 years there has also been a transfer of ideas about resilience into the social sciences, and especially work applying various aspects of resilience to the development of human communities and to the role of resilience in attaining sustainable development (Adger 2000; Berkes and Folke 1998). Other areas also developing work on resilience are urban and regional development (Hill *et al.* 2008; Martin and Sunley 2015) and various policy fields across a wide spectrum, including national security, public health and financial management (Anderson 2010; Coaffee and Wood 2006).

Directly applying ideas from ecology has involved a conceptualisation of human society in which individuals and families live and function in a community shaped by systemic influences, both internal and external. While both engineering resilience and ecological resilience have been used extensively to analyse the response of human systems to disturbances, there is an increasing recognition that such systems may never reach a state of equilibrium but instead evolve as complex systems that constantly adapt to sustain their development paths (Martin 2012; Scott 2013; Pike *et al.* 2010). This has led to a third interpretation of resilience in human systems, described as 'adaptive resilience', which refers to 'the ability of the system to undergo anticipatory or reactionary reorganization of form and/or function so as to minimize impact of a destabilizing shock' (Martin 2012, 5).

A further strand of research on resilience amongst people and communities draws on psychological resilience theories developed in the 1970s and 1980s independently of Holling. Psychology focuses on resilience as an individual's ability to adapt to stress and adversity; and to a degree, the resilience of a community may in part reflect the wellbeing of its individual members (Garmezy 1973; Garmezy and Streitan 1974; Werner 1989). This approach acknowledges links to mathematics and science, and has stressed that an individual's resilience reflects the ability to respond to adversity by presenting positive adaptability to change (e.g. Luthar and Cicchetti 2000; Luthar *et al.* 2000). It stresses the importance of the socio-cultural context in which individuals operate, echoing research on communities that directly links community development pathways to particular economic and social circumstances (e.g. Chaskin 2008; Flora and Flora 2008; Luthar 2006; Masten 2001; Ungar 2008). A distinction may be drawn between a focus 'assuming neutrality or objectivity in the use of competence indicators across settings (i.e., an etic perspective)' and one 'understanding positive adaptation from within the cultural frame from which competence emerges (i.e., an emic perspective)' (Fletcher and Sarkar 2013, 14).

These ideas in psychology parallel those discussed by Wilson (2012), notably debates about resilience as either a trait or a process. The former considers protective and promotive factors, elaborating initial work by Block and Block (1980), whilst the latter offers scope for analysing person–environment interactions (e.g. Lazarus 1998 1999). Several inter-related studies on community resilience draw on this work in psychology, especially in the context of disasters and in the face of risk and development of coping strategies. From the psychological perspective this recognises resilience as 'the process of coping with stressors, adversity, change or opportunity in a manner that results in the identification, fortification, and enrichment of resilient qualities or protective factors' (Richardson 2002, 308).

The work by psychologists, especially in the context of major disasters and severe trauma affecting numerous individuals in a particular location, raises the question of whether the resilience being referred to in this context can be applied (i.e. 'read across') to a whole community or at a wider scale to a region as in Martin's (2012) work on 'resilient regions'. If so this might make policy formulation relating to promotion of individual, community and regional resilience a more realistic prospect. However, the reality is that, although basic constructs within resilience can be agreed across different approaches, there are then various divergences reflecting both scale-dependent complexities and different theoretical drivers. For example, despite Wilson's (2012) carefully argued consideration of definitions, characteristics and ways of measuring and charting resilience and its various pathways, resilience is not a unitary concept (Martin 2012, 2), but is inherently fuzzy and difficult to assimilate in the context of human communities.

Resilient communities and community capital

At the heart of many attempts to build capacity within communities so that they become more resilient are action-oriented approaches promoting collective and individual changes towards more effective social interaction, including problem-solving exercises, conflict resolution and possible inter-linkages between community resilience and various forms of human and environmental capital (Fazey *et al.* 2007). Numerous models have been used to support these approaches, including participatory action research (McTaggart 1991), adaptive co-management (Armitage *et al.* 2011), trans-disciplinary research (Tress *et al.* 2006) and community-based natural resource management (Robinson 2006). They all address the notion that human communities possess an adaptive capacity, expressed as 'community capacity', in response to change. Community capacity is 'the combined influence of a community's commitment, resources and skills that can be deployed to build on community strengths and

address community problems and opportunities' (Aspen Institute 1996, 17). So adaptation refers to a dynamic social process and how well the community can exist with or respond to change; sometimes given the slogan 'bounce back-ability' (Zolli and Healy 2012). This adaptation may be proactive or reactive, and it may be part of an unintentional process (Adger 2006). Hence there is a long history of referring to certain types of resource-dependent rural communities as resilient in the face of economic or environmental crises. Such resilient rural communities tend to be described as adaptive, flexible, proactive and deliberative with respect to future development strategies (Steinführer 2013).

For example, Magis (2010), whose work aimed at both defining resilience and also providing sample measurements of resiliences, contends that 'communities can develop resilience by actively building and engaging the capacity to thrive in an environment characterized by change, and that community resilience is an important indicator of social sustainability' (p. 401). She noted that the most appropriate community responses to change or disruption can vary from maintenance to adaptation to transformation in order to sustain a healthy community. Thus, at the end of a period of sustained external change a community itself may be significantly altered.

Analysing community capacity has taken place in various contexts, some referred to as social resilience, others explicitly focusing on interactions between people and environment, as in the case of natural resource management (Raymond and Cleary 2013). However, the starting point for analysis is usually how well different 'capitals' are developed within a community, notably economic, social and environmental capitals. Pierre Bourdieu (1986 1987) extended previous work on 'capitals', or various community capabilities and assets that can help provide explanations about the nature of community development. His principal forms of capital were: economic (material property), social (networks of social connections and mutual obligations) and cultural (prestige), though other capitals have been recognised subsequently by different authors. According to Wilson (2012, 21), 'in this framework, individuals and groups are seen to acquire or lose social, cultural, symbolic and economic capital, whereby capital is used both as a metaphor and a description of actual processes'.

Bourdieu's ideas have been developed in various ways, including broader conceptualisations of economic and social capitals (Bryant 2005; Harvey 2006) and the introduction of environmental/natural capital (or biocapacity) in several disciplines to cover human–environment interactions affecting availability and sustainable use of natural resources for human consumption (Magis 2010; Ostrom 2009). Various models have been developed for evaluating the

overall wellbeing of a community and its capacity for community and economic development: an indication of community resilience (e.g. Cocklin and Alston 2003). For example, Flora and Flora (2008) developed a 'community capitals framework (CCF)' to examine 'legacy and change in rural communities'. The CCF employs seven types of capital: cultural, natural, built, financial, political, social and human. Different authors have emphasised the differential importance of these various capitals (Booth and Richard 1998; Dimaggio and Mohr 1985; Patterson 2008; Robinson and Chapman 2012; Vyrionides 2007). Pierce and Robinson (2013), for example, focused on the social capital of South Australian communities where oyster farming has become a major industry. They identified close links between the growth of economic capital through the development of oyster farming, itself highly dependent on pristine marine environmental conditions, and social capital in the form of more social network linkages and increased community pride (see also Compton and Beeton 2012; McGrath 2010). The CCF can be used as a community assessment and development tool (e.g. Ellis and Freeman 2005; Minkler *et al.* 2008; Nelson *et al.* 2010). Raymond and Cleary (2013), for example, used various indicators and rating scales in conjunction with direct community participation to examine community capacity with respect to natural resource management.

Resilience, multi-functionality and scale

The concept of community resilience has also been linked to multi-functionality (usually applied to agriculture that can produce various non-commodity outputs in addition to food), arguing that communities with high economic, social and environmental capacity exhibit both strong multi-functionality and resilience linked to agricultural systems with positive attributes (such as creating additional employment, a more stable food supply, environmental benefits and contributing to increased social, cultural and institutional capital) (Renting *et al.* 2009; Wilson 2007; Zasada 2011). There are links to community capacities, so that multi-functionality can take on a global character (Dibden and Cocklin 2009) with rural communities situated on a spectrum from highly developed to weakly developed capitals, and some communities exhibiting resilience and some not (Cutter *et al.* 2008; Pretty 1995; Rigg *et al.* 2008). Critically, in this conceptualisation, Wilson (2012) acknowledges that '... resilience can be scaled down to the household and individual level, and it is the totality of economic, social and environmental actions / responses of individuals and households within a rural community that shape a community's overall resilience' (p. 368). This suggests a need for greater engagement with the contributions from psychology referred to above to identify how

resilience factors and their potency may be transferred from individuals (Brackenreed 2010) or single businesses (Brewton *et al.* 2010) to communities (Kirmayer *et al.* 2009) or even larger scale regions (Christopherson *et al.* 2010).

Measurement of community resilience has been attempted with respect to specific groups, usually based on surveys of individuals, and also at a regional scale. Wells (2008) for example considered resilience amongst older inhabitants of rural communities in New York State. Here resilience was considered as a personal trait dependent on internal and external protective factors, including social networks (Richardson *et al.* 1990). Self-reliance, friendship networks and good mental health were found to be key elements in delivering high levels of resilience on a quantitative resilience scale. Aggregation from surveys of individuals has also featured strongly in work on group resilience of children and youth. For example, Ungar (2008) analysed 1500 youth in various developed and developing countries, highlighting the need for a more culturally and contextually embedded understanding of an individual's resilience.

By scaling up from the individual to the regional level, a large body of literature has focused on identifying the components and determinants of community resilience in particular spatial localities, including both rural and city regions. Yet it seems that there have been few attempts to compare processes leading to resilience between different types of region, such as urban and rural (Demiroz *et al.* 2013). This raises important questions about the generalisability of resilience frameworks for understanding adaptive community responses in different geographic settings. In literature on urban change there is reference to resilient cities and regions (Godschalk 2003; Newman *et al.* 2009; Pickett *et al.* 2004), which is also a feature of the work of urban economist Mario Polèse (2009 2013). The latter recognises A-resilient cities, which have an ability to survive 'shocks', and B-resilient cities, which have an ability to change and grow after a physical shock (Polèse 2013). Survival, as in the case of New Orleans after Hurricane Katrina or Nagasaki after the atom bomb, is partly a simple reflection of the fact that large cities do not die; they generally rebuild or are maintained in some reduced form. However, B-resilience implies more positive responses, often to economic transformations as in the case of Mumbai or Chicago. Polèse argues that resilience is in-built in many cities, reflecting fundamentals of location, a critical mass of people, higher degrees of (economic and population) diversity, and accumulated physical and knowledge infrastructures that add value to a particular city alongside the historic acquisition of symbolic, historical and emotional significance (Lang and Danielson 2006). Scale is important in these expressions of resilience, but perhaps the growth and

decline of particular urban neighbourhoods has more in common with that of small rural communities or market towns (Edwards *et al.* 2003).

There is also other work that looks beyond the resilience of individuals, communities and even neighbourhoods and cities to broader entities such as regions, as covered in a recent set of papers in the *Cambridge Journal of Regions, Economy and Society* (e.g. Christopherson *et al.* 2010; Simmie and Martin 2010). This develops a highly theorised interpretation of resilience as applied in evolutionary economics, acknowledging the ecological origins of the term 'resilience' but drawing on ideas expressed in the economics literature, with recognition of multiple equilibria (e.g. as measured by employment) and broader social conceptions as discussed above, including resilience as applied to communities and individuals.

A key issue is that these broad conceptual frameworks for resilience contain differences 'especially as they treat time, space, institutions and agency' (Christopherson *et al.* 2010, 3). Hence, there is questioning of whether in a regional context, it is reasonable to talk about resilience, given the potential length of time taken for a region to adapt to changed circumstances, and therefore reach 'equilibrium' (Hassink 2010). Indeed the notion of equilibrium in both regional economic systems and dynamic ecological ones can be questioned, especially given that the time dimension in a human system may be crucial to survival, e.g. the relatively short time-frame in which to provide alternative employment in the event of widespread job losses that could seriously undermine capacity for economic recovery. For example, 'in much of economics, multiple equilibria are simply a feature of the very *a priori* assumptions and structural specification of the theoretical models used' (Martin and Sunley 2015, 5).

Resilience, learning and transition

A key theme in the literature about resilience in individuals and communities is that the ability to adapt to change is a prime component of resilience. This emphasises learning, self-organisation and flexibility as vital ingredients for navigating complex feedbacks, thresholds and changes to systems (Berkes *et al.* 2003). Geographers have utilised these ideas to examine adaptation to climate change, highlighting the importance of innovation and the capacity to learn and transform in order to adapt successfully (Folke 2006). This work has extended ideas about how learning occurs (Gunderson and Holling 2002; Holling 2004), and has also been incorporated into management processes to generate greater community resilience (Walker *et al.* 2002). Tschakert and Dietrich (2010) draw upon these ideas to develop a new methodology to utilise the role of learning as a key element for adaptation and resilience in the

context of climate change. Related research includes Olsson *et al.*'s (2006) conception of transformative capacity, or the ability to create a radically new system when adaptation and adjustments are no longer possible or desirable and the existing system becomes untenable. Yet there is an ongoing debate about the relationship between resilience and transformational change, with some authors suggesting that resilience – being more concerned with the conservative or adaptive maintenance of a system – does not support a radical transformation into something new (Brown 2013; Wilson *et al.* 2013).

Notions of adaptation and transformation, in which communities can be made, remade and unmade, link ideas about resilience to transition theory, which has been applied in various contexts to help understand how human–environment interactions bring about change (e.g. Aage 1998; Mazmanian and Kraft 2009; Wilson 2007). It utilises various concepts to link past pathways, current challenges and future transitional processes (Jessop and Sum 2006; Martens and Rotmans 2002; Peck 1996), employing the notion that there are key stages in any given transition that can presage the starting point for the next transition. These stages can be recognised using particular transitional concepts, including path dependency, social memory and transitional corridors. In the case of community resilience, pathways can be linked to the strength of economic, social and environmental capital. Wilson (2012, 55–9) supplies some idealised transitional pathways, but acknowledges that multiple transitional processes may be more common in reality, with different stakeholder groups in a community playing key roles at different times in any move from weak social capital to strong social capital and vice versa. One attraction of transition theory, though, lies in its concern with transitional 'contingency', which emphasises interactions and scale-independence geographically and temporally; the ability to look both backwards and forwards along pathways; an emphasis on power relations; the bounded nature of transitional opportunities; and the overlapping nature of processes of change (p. 60). Indeed, the combination of resilience and transition theory offers a framework for understanding the evolution of environmental pathways at community level and the nature of changes in resilience and vulnerability over time.

Critiques of community resilience

Direct analogies from resilience as used in natural science to human community resilience cannot readily be made as 'human systems are inherently complex, non-linear, dynamic, and often unpredictable in their quest for strengthened resilience' (Wilson 2012, 216). This unpredictability means that as communities search for pathways to achieve 'strong' resilience, there is no single best or most

moral path. A delicate balance has to be struck between changes that are desirable from a community resilience perspective and change that is realistically feasible from a developmental perspective. However, using the apolitical ecological concept of resilience can privilege established social structures and 'also closes off wider questions of progressive social change which require interference with, and transformation of, established "systems"' (MacKinnon and Derickson 2013, 254).

Other critiques of 'resilient human communities' have been voiced, for example problematising the use of 'community'. More than 50 years ago Hillery (1955) recognised 94 different definitions, and a wide spectrum of communities can be recognised, from those that are part of 'open' and 'unbound' systems to more 'closed' readily identifiable geographical entities, such as a village community. Communities are affective units of belonging and identity, functional units of production and exchange, networks of relations that structure interchange between individuals, and they are a unit of collective action (Chaskin 2008). Staeheli (2008) acknowledges that a 'community' is largely an attitudinal construct, which means different things to different people. However, much of the work on community resilience refers to 'communities as local environments providing a set of risk and protective factors that have an influence on the well-being of community members' (Chaskin 2008, 65). Rarely is the problematic nature of 'community' addressed in the context of community resilience. And indeed the dysfunctional character of some communities, contributing to a lack of resilience, raises issues about the extent to which the community is always the most appropriate unit to target. For example, Smith (2000) warns of the limitations of locality and community in developing 'moral geographies', and of partiality in the idealisation of traditional communities, which were often a place of oppression through intolerance of difference. He also notes that 'communities of place are of diminishing importance in urban areas, where residents tend to form social networks from people brought together for reasons other than proximity of residence' (p. 95). This raises issues about the very notion of place-based communities that has been central to so much of the writing on community resilience.

Another concern is that use of the term resilience is often not accompanied by clear statements about either what exactly is being resilient, or what it is being resilient to. Is resilience a normative concept, can it be defined prescriptively and is it a concept that can be subjected to empirical testing? The last question may be very difficult to answer if resilience involves some aspects of stability in the face of changing external forces (Machlis and Force 1988).

MacKinnon and Derickson (2013) provide a strong critique of the use of resilience within public policy.

They contend that the concern with the resilience of places is misplaced in terms of spatial scale 'since the processes which shape resilience operate primarily at the scale of capitalist social relations' (p. 253), meaning that communities cannot be expected to develop adaptive capacity as self-contained systems that are divorced from national and global flows of capital and power. They highlight the use of resilience in policy discourses in the United Kingdom where community resilience is commonly linked to notions of community participation in decisionmaking, the creation of an inclusive and creative culture, a local economy based on sound environmental principles and supportive inter-community links (Chatterton and Cutler 2008; Featherstone *et al.* 2012). They refer to this as an apolitical inclusive localism (Mason and Whitehead 2012), but caution that much of the governmental rhetoric pertaining to resilience is less politically neutral and promotes acceptance of the 'shocks' imposed by globalisation, likening capitalism to an immutable physical force, when such an analogy is false (Hudson 2010), and under which circumstances the notion of a resilient community is vacuous (Peck *et al.* 2010). Indeed, Joseph (2002) sees acceptance of shocks as maintaining and legitimising forms of social hierarchy and control, in part by producing a political agenda in which cuts in public expenditure are allied to calls for greater community resilience, but which in reality recreate unequal social relations (Cumbers *et al.* 2008; Neal 2013). MacKinnon and Derickson (2013) provide an alternative to the use of resilience, which they term resourcefulness, aimed at enabling disadvantaged groups in society to access the levers of social change. Resourcefulness relies on greater local autonomy towards the generation of broader development of social justice through local political expression that releases resources, skills sets and local knowledge, use of indigenous and 'folk' knowledge, and cultural recognition. This is essentially a practical proscription for local action that can 'develop resilience', but without 'the subordination and corraling of the social within the framework of socio-ecological systems' (p. 266).

A focus on resourcefulness might also present opportunities to address aspects of community development often overlooked. These include the role of power in small communities and how it is exercised (Robinson and Kiley 2010), including power exogenous to the community (Derkzen *et al.* 2008). The role of different governance structures in communities is closely linked to the exercise of power, but specifically how ideas about resilience are built into policies at various levels is clearly fundamental in determining which pathway is followed and which organisations and individuals are involved. More geographically nuanced work is needed on pathways towards strong resilience, recognising that communities at different scales and

in different spatial and political contexts may have different capacities to adapt or renew in the face of changing circumstances. More comparative work applying evolutionary approaches towards analysing place specific resilience processes (Martin 2012) may be appropriate rather than single and static snapshot analyses focusing on examining response mechanisms of a particular community to a particular shock. Understanding pathways towards strong community resilience also requires better recognition that some pathways are only possible through radical restructuring of various processes (Pretty 2007). This is perhaps at the centre of the sharpest current debates both in the political realm and in academe, in terms of the role ascribed to 'local' and 'bottom-up' developments (Bailey *et al.* 2010; Hazeltine and Seyfang 2009). This issue is closely linked to the problem of how to operationalise resilience in practical terms and the method to be used to assess resilience (Cutter *et al.* 2008).

This essay has summarised key issues in community resilience research. It recognises the need for an ongoing interdisciplinary engagement with resilience to ensure that different strands of literature (environmental, economic, social, geographical, psychological, policy studies) do not develop as silos, using different approaches and definitions.

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