



Resilience for Whom? Emerging Critical Geographies of Socio-ecological Resilience

Raven Cretney*

College of Arts, Victoria University

Abstract

Resilience has fast become a popular catchphrase used by government, international finance organisations, NGOs, community groups and activists all over the globe. Despite its widespread use, there remains confusion over what resilience is and the purpose it serves. Resilience can, in some cases, speak to a desire to successfully respond and adapt to disruptions outside of the status quo. However, this conceptualisation of resilience is far from uncontested. Emerging research has shown a lack of consideration for power, agency and inequality in popular and academic use of these frameworks. Criticism has also been raised regarding the use of resilience to justify projects informed by neoliberal ideologies that aim to decrease state involvement, increase community self-reliance and restructure social services. Despite this, resilience is being used by community and activist groups that aim to address local and global environmental and social issues. With this critical insight, the need has arisen to question what is being maintained, for whom and by whom, through these discourses of resilience. In this review, I trace the evolution of the concept in the literature. Building on this, I discuss three interpretations of the resilience paradigm in current academic, political and activist arenas. I conclude by discussing possible future directions for critical geographic perspectives of resilience.

Introduction

From the beginning of the 21st century when the horrors of global terrorism entered the consciousness of those in the Western world, to human and environmental catastrophes such as Hurricane Katrina in 2005, the Tōhoku earthquake and tsunami in Japan during 2011 and the global financial crisis in 2008, we are increasingly faced with examples of the unprecedented social, environmental and economic threats affecting the globe. Concern regarding natural and man-made disasters such as these has led to an increase in the use of discourses of securitisation, preparedness and the now familiar idiom of resilience (MacKinnon and Derickson 2012). These catastrophic events have not occurred in a political and social vacuum, nor are the responses to such occurrences void of ideological influence (Oliver-Smith and Hoffman 2002). Such disasters have occurred within the context of the rising dominance of the political framework of neoliberalism that has expertly normalised and rationalised the discourses of private property, individual responsibility and the dominance of the market (Harvey 2005).

It is within this context that the discourse of resilience has risen to prominence. From its early beginnings in the 1970s and 1980s as an ecological framework for understanding shifts in systems, resilience now graces the policy documents and plans of many nation states, international organisations and NGOs (Béné et al. 2012; Brown 2011; Leach 2008). Through a thorough review of the literature, this paper discusses the evolution of the commonly referred to term socio-ecological resilience, from its origins as an ecological concept to a popular global discourse. This article does not intend to build on the question regarding for whom popular discourses of resilience are serving but instead seeks to outline and explore the ways in which resilience is being utilised by different interest groups to serve very different purposes.

Because resilience has developed across several disciplines, it is important to understand the wider evolution of the framework. It is also important to more fully comprehend the theoretical background to socio-ecological resilience as the foundation of most popular theoretical understandings of resilience (Cote and Nightingale 2012; Cutter et al. 2008; Engle 2011). In this paper, I seek to first explore the broad resilience theory, followed by an in-depth exploration of socio-ecological resilience as a foundation for understanding the popular and mainstream use of resilience ideas. I then discuss the possible implications of these theoretical advancements in relation to how resilience is understood and enacted. Through this, I explore the proposition by scholars such as Cote and Nightingale (2012) and Walker and Salt (2012) that resilience, as a concept, needs to be understood not only as a metaphor but also as a framework shaped by dominant societal values and hegemonic discourses.

The Origins of Resilience

There are many classifications of resilience in different disciplines. The main definitions which are important for understanding socio-ecological resilience are those relating to ecological and social systems. C.S. Holling is often regarded as the founder of modern ecological resilience thought (Gunderson 2010; Nelson 2014; Walker and Cooper 2011). His work on resilience in the 1970s broke ground in the field of ecology with regard to understanding ecological systems, stability and equilibrium (Holling 1973). The defining feature of this work is the clarification between ecological and engineering resilience (Holling 1996). Empirical ecology is based on many traditions of analysis related to classical physics and mathematics; this led to a view that ecosystems are based around static equilibrium, considered as the ideal state – an idea similar to the engineering view of resilience (Holling 1973). However, Holling (1973) posited that ecosystems do not have one static point of equilibrium, but rather a zone of stability that allows for the re-organisation of a system to continually exist and function even in the face of disturbance and change.

This theoretical breakthrough contrasted with the, then dominant, engineering understanding of resilience in several important aspects. An engineering definition of resilience emphasises the ability of a system to efficiently bounce back to a steady-state point of equilibrium. This notion is important within engineering as it maintains the integrity of a design (Holling 1996). Ecological resilience, as defined by Holling, on the other hand, measures the scope of disturbance that a system can absorb before the system changes its structure. Such an understanding places emphasis on the existence of a zone of stable functioning within which an ecological system can absorb change while still maintaining the existence of the system's functions (Holling 2001). Furthermore, Holling proposed that different points of equilibrium can be integrated and nested within a hierarchy of systems. This view challenged the dominant view of a single global environmental equilibrium and laid the foundation for greater awareness of the interconnections between social and environmental systems within the resilience theory (Gunderson 2000).

Integrating the Social and the Ecological

As a result of the increased awareness of the interconnections between the environment and society, resilience has entered mainstream through the theoretical advancement of interdisciplinary socio-ecological resilience (Folke 2006). Social resilience is defined by Adger (2000, 16) as “the ability of groups, or communities to cope with external stresses and disturbances as a result of social, political and environmental change.” In socio-ecological resilience frameworks, social and ecological systems are considered linked and interdependent on one another through the connections between well-being, economic activities and environmental conditions (Adger 2000; Walker and Salt 2012). Through these links, social

and environmental systems can work against one another, or for mutual benefit. For example, the well-being of a social system can be built to the detriment of the environmental system or vice versa (Folke et al. 2003).

Despite the ecological beginnings of resilience that emphasised a move away from bouncing back to a point of equilibrium, the notion has become increasingly prominent for explaining the meaning of resilience in a broad context (Cote and Nightingale 2012). Although ecological resilience drew away from defining a single desirable state, the theory still encompasses the idea of a zone of stability (Gunderson 2000). It is perhaps this idea that has led to resilience being widely considered as *bouncing back* following a disruption. Indeed, much of the literature on socio-ecological resilience employs definitions that involve a similar phrase or relate the origins of the word to the Latin *resilare*, meaning a 'leap backwards' (Gunderson 2010; Paton 2006). Despite this, many scholars studying resilience maintain that the root idea of resilience is not the ability to stay the same or bounce back to the exact same state (Cutter et al. 2008; Folke 2006; Norris et al. 2007; Paton 2006; Walker and Salt 2012; Walker et al. 2006). Resilience, they argue, should focus on the adaptation and change a system can undertake while remaining within critical system thresholds (Walker et al. 2006).

Regardless of these conflicting views, resilience has risen to prominence as the popularly understood concept that distinguishes the ability to cope, respond to change and return to a degree of normal functioning following a crisis. As a result, socio-ecological resilience is widely used as a concept for understanding the links between social and ecological systems, preparing for and mitigating against global environmental crises, and as a framework for disaster preparedness and response (Béné et al. 2012; MacKinnon and Derickson 2012).

Table 1 displays the results of a comprehensive review of the literature to display a variety of ways the term resilience can be referred to. The defining characteristics of these classifications of resilience include the ability to absorb change and the capacity for re-organisation or adaptation in the face of disruption. While the definitions shown in Table 1 bear resemblance to each other, they all remain startlingly vague as to what resilience is, how it can be understood, if it is an appropriate characteristic to measure, and if so how to undertake this task. It is also

Table 1. Definition of resilience.

Term	Description	Citations
Engineering resilience	The efficient stability of a system state	(Gunderson 2000; Holling 1996)
Ecological resilience	The ability of a system to absorb disturbance, before resorting to a shift in system state, through changing variables and processes that control behaviour	(Holling 1973)
Social resilience	The capacity for communities to cope with external disturbances resulting from social, political and environmental change	(Adger 2000)
Socio-ecological	The interplay of factors involved in recovering from disturbances, re-organisation and the development of socio-ecological systems.	(Adger 2005; Berkes, 2007; Folke 2006; Gunderson 2010; Norris et al. 2007)
Community resilience	A process of adaptation in a community following a disruption, distinguished by factors such as social capital and community competencies	(Chaskin 2008; Cutter et al. 2008; Norris et al. 2007)
Urban resilience	The network of structures, processes, infrastructure and community identity that both manages extreme stress and evolves into a more desirable state following a disturbance	(Godschalk 2003; Gunderson 2010; Norris et al. 2007)

important to recognise that even within the framework of socio-ecological resilience, there is a remarkable diversity of approaches. Bahadur et al. (2010) revised 16 author's views on socio-ecological resilience and found that despite being an interdisciplinary field, the scholars' disciplinary background strongly shaped the concepts in their interpretation of resilience.

WHAT CONSTITUTES SOCIO-ECOLOGICAL RESILIENCE?

Two crucial elements to understanding the different interpretations of resilience theory are adaptive capacity and transformation. These two concepts have emerged within socio-ecological resilience frameworks as elements of how complex systems behave and respond to challenges (Pike et al. 2010). In the study of resilience, adaptation and adaptive capacity refer to the patterns and processes of behaviour that engage change to maintain a system within the parameters of critical thresholds (Folke 2006; Nelson et al. 2007; Walker and Salt 2012; Walker et al. 2004). This process involves the capacity to learn from and store lessons from disruptions and past experience and the ability to prepare for and adapt to uncertainty and change (Engle 2011; Folke et al. 2003). Self-organisation, living with uncertainty, efficient and effective responses to disturbances and maintaining a store of resources are all considered important aspects for building adaptive capacity (Folke et al. 2003; Walker and Salt 2012).

Holling's (2001) work explored these ideas further to develop an adaptive cycle which represents the different phases social and ecological systems can move through. Through this idea, Holling termed the alpha phase as the period following a disturbance in which a system is open to change and re-organisation (Holling 2001). The idea of opportunity arising out of a crisis is not a new one, or one confined to Holling's work. Many have commented on the potential for great positive change following a disturbance (Adger 2000; Folke 2006; Solnit 2009; Vale and Campanella 2005; Walker and Salt 2012). This has been noted particularly following disasters, some of which have played a role in weakening undesirable political systems (Solnit 2009).

Transformation entails a more drastic path, where a system shifts from one state to another, as defined by a change in system parameters (Nelson et al. 2007; Walker et al. 2004). Within socio-ecological systems, transformation is thought to occur when the current system becomes untenable or undesirable (Folke 2006). Walker and Salt (2012) describe the prerequisites for transformation within a socio-ecological system as preparedness to change, options to change and the capacity for change. Norris et al. (2007) also note that it is this potential for change which is the part of transformation and resilience frameworks that demarcates resilience from general community capacities.

In addition to adaptive capacity and transformation, there are also a verity of capacities, competencies and measures that have been proposed as elements that can be observed in communities in order to understand, and in some cases, measure resilience. It is possible to define two ways of classifying these indicators, as community capacities or social capital. Social capital does not generally take into account physical aspects of the environment, instead focusing on the social aspects of a community. The term is part of a wider framework that includes natural, built, cultural and economic capital (Dynes 2006). Social capital is considered a measure of the interconnectedness in a community of individuals, the level of trust and embeddedness individuals feel and the methods of communication to disseminate information in a community (Aldrich 2010).

Despite being widely referenced and utilised in resilience frameworks, social capital has drawn significant criticism from geographers for a number of reasons. These arguments generally point to social capital as engaging in a highly romanticised idea of community that lacks a firm theoretical framework (Levi 1996; Mohan and Mohan 2002). In addition, it has been noted that social capital frameworks widely disregard the political and economic factors

that shape not only the creation of social capital but also its destruction (Levi 1996; Mohan and Mohan 2002). Furthermore, theories of social capital regularly ignore negative consequences such as exclusion and hostility to outsiders that can arise from closely knit social networks (Mohan and Mohan 2002).

Community capacities, as an alternative to social capital frameworks, are also regularly engaged with in the application of resilience theory. These capacities are not always embedded in a wider framework but cover a wide variety of characteristics that can be present in a social system at varying scales. Community capacities include aspects of social life as well as measures of preparedness and the resilience of physical infrastructure (Norris et al. 2007). Many of these traits, such as social support or participation, enable an effective response to a recovery (Cicognani et al. 2007; Gunderson 2010; Norris et al. 2007). While others, such as social learning and diversity, enable adaptation to and recovery from disruptions (Lorenz 2010; Okvat and Zautra 2011; Tidball and Krasny 2007). These concepts of community capacities alongside the integration of social and environmental systems, adaptive capacity and transformation are important to the theoretical base of resilience. However, these academic ideas do not necessarily reflect the way mainstream resilience is understood or enacted in the popular domain.

Emerging Critical Perspectives

As has been argued, despite the complexity and diversity in scholarly approaches to resilience, popular discourse often dictates resilience as *bouncing back* or returning to normal following a disruption (Leitch and Bohensky 2014). This, however, deviates significantly from the technically defined socio-ecological resilience described earlier. As Engle (2011) points out, the contemporary mainstream definition of resilience is often considered to be that of socio-ecological resilience, when in reality it is the engineering or *bounce back* framework that is most often acted upon. This had led to concerns that, while the term is trendy in mainstream politics and business, resilience is at risk of becoming a fuzzy concept that is difficult to enact and define (Pendall et al. 2009).

The use of resilience by a variety of disciplines, differing definitions and the widespread popular use of the concept have all contributed to a growing body of work critiquing and exploring the rise of resilience discourses. This proliferation of resilience-based work in the last decade has led to questioning the political and economic ideologies involved in shaping resilience discourses. However, activists and community groups have also appropriated the term for use in grassroots causes, further confusing and complicating what resilience is and who it serves. Through a review of recent literature, three trends regarding resilience emerged. The first involves the distinct lack of complex and applied understandings of social and cultural dynamics within resilience frameworks. The second involves the use of resilience as a tool for perpetuating hegemonic values and discourses, while the third involves a more countercultural form of activism that mobilises a specific articulation of resilience and transformation.

RESILIENCE AND SOCIAL SCIENCE

Recent scholarly papers show increasing concern as to the manner in which resilience is being enacted in the context of society–environment relations. Some of the earliest criticism of socio-ecological resilience points to the lack of consideration of social factors in the framework (Brown 2011; Davidson 2010). For instance, it has been noted that humans hold the unique capacity for insight, imagination and creativity, which aid humanity in pre-empting and preparing for change in ways that ecological communities are unable to do (Cote and Nightingale 2012; Davidson 2010; Holling 2001). In addition, there has been little emphasis on the agency of individuals and communities to drive processes and outcomes through these capacities (Brown 2011; Davidson 2010).

However, it has become obvious that the lack of resilience research in this area is due to not only lack of consideration but also epistemological constraints (Cote and Nightingale 2012; Joseph 2013; MacKinnon and Derickson 2012; Welsh 2014). This work notes that resilience frameworks have maintained strong ties to the ecological discipline which do not easily equate with social systems (Cote and Nightingale 2012; Davidson 2010; Hornborg 2013; Hudson 2010; Porter and Davoudi 2012). As a result, strong ties with ecology have led to the assumption that natural and social systems are essentially similar and operate on similar principles (Cote and Nightingale 2012).

One of the more troubling aspects of this is the application of the adaptive cycle, designed as a model for ecological systems, to the broader social system (Hornborg 2013; Welsh 2014). As Hornborg (2013) notes, there are two problems with this proposition. First, it relies on a contradictory understanding of the relationship social and environmental systems – for instance, the inverse relationship between social and natural capital stocks suggests separate, not co-dependant, social and environmental systems (Hornborg 2013). Second, the phases of collapse and re-organisation in an adaptive cycle within a social system context buy into the idea of societal collapse which has been challenged by many social scientists as an inaccurate representation of history (Hornborg 2013; McAnany and Yoffee 2010; Vale and Campanella 2005). It has also been noted that there is lack of appreciation and understanding of how individuals and communities exercise agency in shaping adaptation and responses to change in mainstream resilience policies (Pendall et al. 2009). For instance, Pike et al. (2010) note that engaging with adaptive capacity is more likely to encourage small, incremental changes along a preconceived development path rather than advocate for significant structural and systemic change.

Furthermore, concern has been raised with regard to the lack of consideration for politics, power and culture in concepts of resilience (Hornborg 2013; Leach 2008; MacKinnon and Derickson 2012; Walker and Cooper 2011). The lack of politicisation and consideration of power is dangerous as it presumes equality across individuals, communities and nations for coping with challenges (MacKinnon and Derickson 2012). The state holds immense power which can shape both the definition of and determinants of resilience and adaptation in current social systems (Pike et al. 2010). For example, within resilience theory, in order to adapt and respond to disruptions effectively, a country would require strong institutions and resources (Engle 2011). As a result, developing countries could be at a significant disadvantage in this regard due to the inequitable distribution of resources globally, a point which goes unacknowledged in wider resilience theory (Engle 2011).

The absence of topics of power and politics suggests not only that the research is lacking these perspectives but also that as an ideology, resilience itself can be seen as a manifestation of power (Hornborg 2013; Wakefield and Braun 2014). Thus, discussions of resilience mask the ways in which resilience discourses reinforce and create hegemonic political and ideological discourses (Cote and Nightingale 2012; Joseph 2013; MacKinnon and Derickson 2012). This has led to claims that resilience is a profoundly conservative concept, actively employed as a tool to privilege and reinforce dominant political ideologies (Jerneck and Olsson 2008; MacKinnon and Derickson 2012).

RESILIENCE AS A TOOL FOR HEGEMONIC NEOLIBERAL DISCOURSES

The term resilience is also increasingly used at the top levels of governance nationally and globally (Cote and Nightingale 2012; Reid 2012; Walker and Cooper 2011; Welsh 2014). This trend has sparked widespread concern as to the ways resilience discourse is being mobilised and enacted at a popular and political level (Béné et al. 2012; Joseph 2013; MacKinnon and Derickson 2012; Neocleous 2013; O'Malley 2010; Reid 2012; Walker and Cooper 2011).

Governments such as the United Kingdom have elevated resilience policies to high priority, while the United Nations Office for Disaster Risk Reduction, World Food Programme, the Swiss Agency for Co-operation and the World Bank all have resilience programmes (Béné et al. 2012; Brown 2011; MacKinnon and Derickson 2012; Reid 2012; Welsh 2014). In addition, resilience is now used through militaries and security programmes, as well as a catchphrase for self-help and individual improvement, further expanding the use of resilience to incorporate neoliberal subjectivities (Coaffee and Rogers 2008; Neocleous 2013; O'Malley 2010; Walker and Cooper 2011).

The rise of neoliberal policy and ideology in the last three decades has been widely noted, critiqued and protested (Guthman 2008; Harvey 2005; Peck and Tickell 2002). Most recently, commentary on the rise of resilience has been linked to normalised neoliberal ideology, a strong focus on individualism, self-sufficiency and market-centric approaches (Gill 2008; Harris 2009; O'Malley 2010). This work has intersected with commentary on disaster capitalism to highlight the ways in which governments and global organisations are mobilising change, uncertainty and disaster to reinforce hegemonic political and economic discourses (Klein 2007; MacKinnon and Derickson 2012; Walker and Cooper 2011; Welsh 2014).

Here, resilience is seen as a tool for promoting neoliberal ideology. Through the action described by Peck and Tickell (2002) as rolling back the state, resilience is contributing to the weakening of state influence over domains of life, and the increase in individual and corporate responsibility. Through the use of resilience theory and the implementation of resilience projects and policies, state powers are encouraging and, in some cases, mandating that communities, departments and projects become increasingly adaptable, flexible and open to change through disruption (Cote and Nightingale 2012; Joseph 2013; Reid 2012). Ideologically, resilient nations, cities and individuals are increasingly attractive as facets of capitalist society as they provide readily adaptable individuals, places, economies and communities that can shift with the demands of market-driven global economy (Joseph 2013; MacKinnon and Derickson 2012; Neocleous 2013). MacKinnon and Derickson (2012) make this point through the example of the UK Government's Big Society project, which aims to improve the self-reliance of communities, extend market provisions of services and reduce the role of the state through raising awareness about individual's responsibilities, extending community activities and volunteering. However, as the authors note, in reality, this sort of policy enacts a form of "responsibility without power," whereby the state withdraws from participating but still holds the majority of the power and resources (Peck and Tickell 2002: 7). Likewise, Catney et al. (2013) note that projects such as Big Society neglect social justice by 'empowering' community groups with responsibilities, when in reality, they are alternatives to state providers of social services that are flexible and low cost. Joseph (2013, 44) describes this use of resilience as creating "a sphere of governance which [the state] oversees from a distance through the use of its powers."

This is similar to Peck and Tickell's (2002) other classification of neoliberalism as the rolling out of the state's influence on norms and values in broader society. Resilience discourses, in this case, are strengthened through the actions of the state in order to reinforce neoliberal norms and subjectivities. In this vein, and partially influenced through resilience theory in psychology, mainstream discourses of resilience have quickly moved from pursuing the boundaries of a system to focussing on individual responsibility and preparedness (Joseph 2013; Neocleous 2013; O'Malley 2010; Porter and Davoudi 2012; Schott 2013). O'Malley (2010) discusses this in terms of the *resilient subject*, which is shaped by neoliberal resilience to focus on personal strength, individualism and self-sufficiency. This concept, he argues, has been expressed through a boom in self-help books and consultancies specialising in training individuals how to be more resilient, bounce back and cope better with life's challenges (O'Malley 2010). The work in this area strongly suggests that resilience is being co-opted and shaped by neoliberal subjectivities – the

ways of thinking moulded by neoliberal norms and values. Neocleous (2013, 4) describes this more strongly as “nothing less than the attempted colonisation of the political imagination by the state” in order to cultivate willing, adaptable and resilient neoliberal subjects.

RESILIENCE AS SECURITISATION

It is also theorised that this application of resilience has not only removed responsibility away from the state but has also created an atmosphere of constant vigilance and risk where a crisis is considered inevitable (Coaffee and Rogers 2008; Nelson 2014; Neocleous 2013). This has resulted in the blurring of lines between securitisation and emergency response, where the ability to adapt to any unpredictable outcome has become the focus of emergency response organisations, rather than actual preparation and response to known threats (Coaffee and Rogers 2008; Walker and Cooper 2011). The aim of these policies according to Coaffee and Rogers (2008) is to develop resilience policies in communities which might reinforce wider institutional security arrangements.

As noted by Walker and Cooper (2011, 17), this infiltration of resilience as a mode of increasing security in everyday life results in the “permanentization of crisis” which leads to not only hyper vigilance for ever possible threats but also the extension of emergency response into the realms of post-disaster recovery and urban planning. Through this approach, measures are often justified in terms of resilience that may in practice result in further marginalisation of disadvantaged populations, threaten democratic processes and encourage the securitisation of the biosphere through the extension of neoliberal environmental management (Coaffee and Rogers 2008; Walker and Cooper 2011). In addition, this securitisation further contributes to the neoliberalisation of individual subjectivities. This occurs through the shaping of security as based around managing vulnerable subjects who, as individuals, need to become adaptable to overcome challenges, again deflecting criticism and responsibility away from the state and towards individuals (Schott 2013).

In perhaps a more benign fashion, employing resilience can also act as a motivator for authorities to act quickly and expansively in disaster recovery. As Hayward (2013) notes, this process often sweeps over the citizens still in shock from the fallout of the crisis. This is a concerning trend in post-disaster recovery, especially if, as Honig (2009) claims, times of emergency and disruption are often used by the state to override democratic processes.

RESILIENCE AS RADICAL TRANSFORMATION

While the use of resilience-based policies have provided encouragement for increased uptake of individual and community resilience discourses, there has also been a simultaneous surge of grassroots activities with an alternative vision of resilience (Cretney and Bond 2014; Nelson 2014; Shaw 2012). Unlike the resilience discourses mobilised by global elites, grassroots resilience is articulated as a concept for designing community-driven approaches to environmental and social issues. Community resilience is frequently the focus of extensive research as scholars investigate what capacities and features of a community enable it to respond and adapt to change and uncertainty (Cutter et al. 2008; Norris et al. 2007; Tidball and Krasny 2007; Tobin 1999). However, the discourses of resilience directly taken up by grassroots groups are often utilised as a medium to encourage countercultural activism and behaviour.

The strongest case for this use of resilience is the Transition Towns movement that originated in the UK in 2005 (Connors and McDonald 2011; Shaw 2012; Welsh 2014). Transition Towns (TT) is a global network of locally focussed community groups seeking to increase their community’s resilience to the triple threats of climate change, peak oil and global financial crises

through engaging in local activities such as alternative currencies, community gardens, raising awareness and alternative energy projects (Hopkins 2009). The TT philosophy articulates resilience as one of six core principles (Hopkins and Brangwyn 2010). Resilience, according to Hopkins (2009), is required for local communities to face change and uncertainty, particularly as a result of climate change. Haxeltine and Seyfang (2009) note that this expression of resilience is considered synonymous with localisation philosophy, a point they find problematic as it is not a strong tenant in socio-ecological resilience theory. There are also several other aspects which link resilience to anti-neoliberal and countercultural values that can be enacted by community groups.

In the first instance, resilience has been connected to ideas of environmental and social change through its links with sustainability, with some even calling the term 'the new sustainability' (Davidson 2010). Sustainability and resilience are also considered by some to be linked and interdependent concepts (Magis 2010; Tobin 1999). This has led to resilience being applied to similar issues as sustainability, most notably, climate change (Engle 2011). While sustainability often focuses largely on the environment, resilience can focus on either social or environmental systems or both (Hudson 2010). As Walker and Salt (2012) note, a system can be environmentally resilient but not socially desirable, and vice versa. Similarly, as Hayward (2013) notes, resilience can act as a powerful motivator for living sustainably through encouraging awareness of the ecological limits society faces. Indeed, in the more radical articulation of resilience, groups like Transition Towns use resilience in this way to communicate ideas of environmental degradation and resource limits.

Nelson (2014) describes this radical potential of resilience as the possibility for a new system to arise out of the old, which she describes as an ontology of potentiality. This idea of transformation occurs within broader SES resilience frameworks but takes on a different meaning when articulated with radical nuances. Transformation, in broad SES theory, is considered the complete shift of a system from one set of parameters to another when the system is considered undesirable or untenable (Engle 2011; Walker et al. 2004). Walker and Salt (2012) note that transformation is not without pain but is better carried out sooner rather than later due to the increased embeddedness of resources in a system the longer an undesirable system operates. There is potential for this element of resilience theory to be a cornerstone of an alternative articulation of resilience.

As discussed by Cretney and Bond (2014), resilience can be articulated and practised in a way that expresses transformative, alternative counter-neoliberal discourses of self, community and society, especially in community groups involved in post-disaster recovery. Hudson (2010) also notes that the purpose of adaptive capacity and transformation should be to emphasise coping with external challenges, while transitioning to a more ecologically sensitive and socially just form of social organisation. Not only do these observations of resilience theory indicate the radical possibility for transition and transformation out of the neoliberalised present, they also speak to social justice concerns.

One way that groups such as Transition Towns engage with resilience and the concept of transformation in a radical way is through shifting subjectivities. Through the reinforcing of neoliberal subjectivities, resilience has emphasised the importance of individualism and personal responsibility (Neocleous 2013; O'Malley 2010). However, the actions of these groups, taken in the name of resilience, often challenge these values and encourage new ones. For example, autonomous activism seeks to shift the practices of everyday capitalist life to everyday alternatives (Chatterton and Pickerill 2010). Cretney and Bond (2014) show that these forms of activism, motivated by resilience ideas, can encourage shifts in norms around the role of the market in service provision, the role of the individual and the strengthening of community networks and action. Subsequently, this has revealed that the practices of autonomous activism can engage with resilience as a theoretical framework for conceptualising and enacting this change in an autonomous and radical way.

Similarly, Nelson (2014) notes that transformation of hegemonic capitalist systems requires innovative learning and experiments that seek to create and build alternative systems and structures that start small to build to larger scales. Nelson (2014) links this form of radical transformation to resistance, noting that, if belief in the alternative exists, those with the belief will affect the creation of new possibilities. While it is possible to see this articulation of resilience as resistance, scholars have simultaneously noted the distinctions between resistance and resilience (Katz 2004; Sparke 2008). Sparke (2008) describes resistance as achieving change through an oppositional focus, while outlining resilience as the ability to survive without changing the reason that surviving is the only option.

Perspectives such as this lend credence to the position of MacKinnon and Derickson (2012) who argue that those aspiring to radical change and resistance should abandon resilience as a framework for achieving change due to the ideological issues with the concept. However, while there is currently not a large body of work exploring these alternative forms of resilience, the widespread use of the term, including by community groups, does show the multiple applications, definitions and interpretations that are being articulated at different interest groups.

Future Directions

Resilience, as has been noted by several authors, can be seen as neither good nor bad. Instead, the way in which resilience is engaged with determines outcomes (Béné et al. 2012; Walker and Salt 2012; Walker et al. 2004). Viewing resilience as a universal good “assumes that the economy, community and landscape being discussed are in a desirable state that you want to maintain ... Undesirable states of systems can be very resilient” (Walker and Salt 2012, 20). Indeed, one could pose the question of whether the values driving the use of resilience shape outcomes more so than the concept of resilience. Through understanding the values at work behind resilience, it may be possible to see that resilience is an emptier metaphor than previously recognised. That is, resilience as a framework does not provide guidance towards a future that is unquestionably beneficial to society and the environment. In this view, actions taken in the name of resilience have less to do with theoretical socio-ecological resilience and more to do with the values and motivation of those taking action (Cote and Nightingale 2012).

When addressing the theory of socio-ecological resilience, it is obvious that when a system does not experience shifts and stagnates, resilience is impaired. This is because a history of disturbances is what is drawn on to prepare and respond to changes in the future (Holling 2001). Given history and the tendency of human societies to experience social and political re-organisation following periods of high inequality (Fischer 1996; Justino et al. 2003; Wilkinson 2006), it is possible that engaging with resilience as a tool for perpetuating neoliberal hegemony will eventually have the opposite effect. With increasing inequality and entrenched power in the hands of the few, resilience, in the socio-ecological theoretical sense, could actually be eroding. However, this is a huge gamble to take with future generations and the environment's well-being, especially given the time it may take for change to occur. This area, involving closer and more detailed analysis of the behaviour of social systems under stress, particularly factors relating to social and environmental issues, is a strong area for future research.

In addition, if resilience is held as an aspiration, it does not make adaptive sense to focus solely on continuously preparing for and recovering from disasters, especially in the context of climate change and the increasingly devastating effects from extreme weather events (IPCC 2013). In this case, it makes sense to tackle the root causes of social and environmental issues rather than perpetually react to disaster and crisis events. In this way, there are perhaps some lessons from the radical articulation of resilience which seeks to address the root problems with the capitalist, consumerist society which has arguably resulted in many of the environmental and social issues

we are dealing with today. However, this area has little empirical or theoretical research and is also an area for future research to explore.

Conclusion

Resilience is a word with numerous meanings and a framework with many applications. Resilience itself could be considered a resilient concept. It has been adapted to suit different situations and contexts and continues to dominate approaches to disaster, environmental problems and individual psychology. This paper has laid out the background to the theoretical evolution of socio-ecological resilience and has explored the emerging critical geographies that are shaping current discussions about what form resilience takes in an interconnected socio-ecological system, and the impacts mainstream resilience discourses are having on politics and individuals subjectivities.

The hegemonic use of resilience provides extensive grounds for concern. The lack of acknowledgement of politics, power, inequality and agency provides fertile ground for those wishing to perpetuate neoliberal ideology to engage resilience as a tool. While it does appear that resilience is also being used by activists and community groups, there is little research in this area which needs further research and consideration.

This leads to the concern of Cote and Nightengale (2012), who state that we must question resilience of what, and for whom? Some have claimed that resilience is a useful metaphor for understanding and responding to change (Cote and Nightingale 2012; Norris et al. 2007). Extending on this, Walker and Salt (2012) describe how the values of the individuals, communities and societies enacting resilience can drive the outcomes. It has been noted, in work on transformation and adaptation, that a system can transform to a different system state when it is considered undesirable or untenable (Folke 2006). As noted by Engle (2011), these terms are highly socially constructed; depending on the values of a society, different system states will be considered undesirable.

However, MacKinnon and Derickson (2012) note that we need to acknowledge the dominance of neoliberalism and capitalism in shaping mainstream views on development and what is considered normal. When doing so, we see the ways in which resilience is articulated to validate these views. As Hornborg (2013) notes, resilience as a theoretical discipline has explicitly avoided criticism, and is, as a result, questionable as a scientific endeavour. Thus, resilience is emerging as one of the topical points for critical geography, particularly with regard to society-environment relations. The continued evaluation and critique of resilience is exceedingly important to understand both how concepts like resilience are being appropriated and moulded to further hegemonic values and discourses and how they are being subverted for radical or countercultural causes.

Acknowledgement

The author would like to thank the two anonymous referees and the editor for their supportive and constructive reviews of this paper, as well as Dr. Meagan Tyler and Dr. Sophie Bond for their insightful and helpful comments on earlier drafts.

Short Biography

Raven Cretney's research approaches the social and cultural aspects of current local and global issues, particularly surrounding crisis and disaster. She has co-authored a paper on emerging radical articulations of resilience and is working on further papers addressing the capacity for grassroots responses to environmental and social issues. Her current research for her doctorate

in environmental sociology builds on resilience theory and disaster sociology to investigate long-term political and social responses to disaster in Christchurch, New Zealand. She holds a BA in Geography and a Masters of Environmental Studies from Victoria University of Wellington, New Zealand. Raven is currently studying towards her PhD at Victoria University in Melbourne, Australia.

Note

* Correspondence address: Raven Cretney, College of Arts, Victoria University, Melbourne, Australia. E-mail: ravencretney@gmail.com

References

- Adger, W. N. (2000). Social and ecological resilience: are they related? *Progress in Human Geography* 24 (3), pp. 347–364.
- Adger, W. N. (2005). Social-ecological resilience to coastal disasters. *Science* 309 (5737), pp. 1036–1039.
- Aldrich, D. P. (2010). The power of people: social capital's role in recovery from the 1995 Kobe earthquake. *Natural Hazards* 56 (3), pp. 595–611.
- Bahadur, A. V., Ibrahim, M. and Tanner, T. (2010). The resilience renaissance? Unpacking of resilience for tackling climate change and disasters. *Strengthening Climate Resilience Discussion Paper 1*, UK Department for International Development.
- Berkes, F. (2007). Understanding Uncertainty and Reducing Vulnerability: Lessons from resilience thinking. *Springer Natural Hazards* 41, pp. 283–295.
- Béné, C., Wood, R. G., Newsham, A. and Davies, M. (2012). Resilience: new utopia or new tyranny? Reflection about the potentials and limits of the concept of resilience in relation to vulnerability reduction programmes. *IDS Working Papers* 2012 (405), pp. 1–61.
- Brown, K. (2011). Policy discourses of resilience. In: *Climate change and the crisis of capitalism*. New York: Routledge, pp. 37–50.
- Catney, P., MacGregor, S., Dobson, A., Hall, S. M., Royston, S., Robinson, Z., ... Ross, S. (2013). Big society, little justice? Community renewable energy and the politics of localism. *Local Environment* 19 (7), pp. 1–16.
- Chaskin, R. J. (2008). Resilience, community, and resilient communities: conditioning contexts and collective action. *Child Care in Practice* 14 (1), pp. 65–74.
- Chatterton, P. and Pickerill, J. (2010). Everyday activism and transitions towards post-capitalist worlds. *Transactions of the Institute of British Geographers* 35 (4), pp. 475–490.
- Ciocognani, E., Pirini, C., Keyes, C., Joshanloo, M., Rostami, R. and Nosratabadi, M. (2007). Social participation, sense of community and social well being: a study on American, Italian and Iranian university students. *Social Indicators Research* 89 (1), pp. 97–112.
- Coaffee, J. and Rogers, P. (2008). Rebordering the city for new security challenges: from counter-terrorism to community resilience. *Space and Polity* 12 (1), pp. 101–118.
- Connors, P. and McDonald, P. (2011). Transitioning communities: community, participation and the Transition Town movement. *Community Development Journal* 46 (4), pp. 558–572.
- Cote, M. and Nightingale, A. J. (2012). Resilience thinking meets social theory: situating social change in socio-ecological systems (SES) research. *Progress in Human Geography* 36 (4), pp. 475–489.
- Cretney, R. and Bond, S. (2014). “Bouncing back” to capitalism? Grass-roots autonomous activism in shaping discourses of resilience and transformation following disaster. *Resilience* 2 (1), pp. 18–31.
- Cutter, S. L., Bames, L., Berry, M., Burton, C., Evans, E., Tate, E. and Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change* 18 (4), pp. 598–606.
- Davidson, D. J. (2010). The applicability of the concept of resilience to social systems: some sources of optimism and nagging doubts. *Society & Natural Resources* 23 (12), pp. 1135–1149.
- Dynes, R. R. (2006). Social capital: dealing with community emergencies. *Homeland Security Affairs* 2 (2), pp. 1–26.
- Engle, N. (2011). Adaptive capacity and its assessment. *Global Environmental Change* 21 (2), pp. 647–656.
- Fischer, D. H. (1996). *The great wave: price revolutions and the rhythm of history*. New York: Oxford University Press.
- Folke, C. (2006). Resilience: the emergence of a perspective for social-ecological systems analyses. *Global Environmental Change* 16 (3), pp. 253–267.
- Folke, C., Colding, J. and Berkes, F. (2003). Synthesis: building resilience and adaptive capacity in social-ecological systems. In: *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge: Cambridge University Press, pp. 352–383.
- Gill, R. (2008). Culture and subjectivity in neoliberal and postfeminist times. *Subjectivity* 25, pp. 432–445.
- Godschalk, D. R. (2003). Urban hazard mitigation: creating resilient cities. *Natural Hazards Review* 4 (3), pp. 136–143.

- Gunderson, L. (2000). Ecological resilience – in theory and application. *Annual Review of Ecology and Systematics* 31, pp. 425–439.
- Gunderson, L. (2010). Ecological and human community resilience in response to natural disasters. *Ecology and Society* 15 (2), p. 18.
- Guthman, J. (2008). Neoliberalism and the making of food politics in California. *Geoforum* 39 (3), pp. 1171–1183.
- Harris, E. (2009). Neoliberal subjectivities or a politics of the possible? Reading for difference in alternative food networks. *Area* 41 (1), pp. 55–63.
- Harvey, D. (2005). *A brief history of neoliberalism*. Oxford: Oxford University Press.
- Haxeltine, A. and Seyfang, G. (2009). Transitions for the people: theory and practice of “transition” and “resilience” in the UK’s transition movement. *Tyndall Working Paper*, 134.
- Hayward, B. M. (2013). Rethinking resilience: reflections on the earthquakes in Christchurch, New Zealand, 2010 and 2011. *Ecology and Society* 18 (4). <http://www.ecologyandsociety.org/vol18/iss4/art37/>.
- Holling, C. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics* 4, pp. 1–23.
- Holling, C. (1996). Engineering resilience versus ecological resilience. In: Shulze, P. (ed.) *Foundations of ecological resilience*. Washington DC: National Academy Press, pp. 31–44.
- Holling, C. S. (2001). Understanding the complexity of economic, ecological, and social systems. *Ecosystems* 4 (5), pp. 390–405.
- Honig, B. (2009). *Emergency politics: paradox, law, democracy*. Princeton: Princeton University Press.
- Hopkins, R. (2009). *The transition handbook: from oil dependency to local resilience*. White River Junction, Vt: Chelsea Green Pub.
- Hopkins, R. and Brangwyn, B. (2010). Transition initiatives primer. Transition Network. [Online]. Retrieved from: <http://www.transitionnetwork.org/resources/who-we-are-and-what-we-do> [Accessed June 5 2014].
- Hornborg, A. (2013). Revelations of resilience: from the ideological disarmament of disaster to the revolutionary implications of (p)anarchy. *Resilience* 1 (2), pp. 116–129.
- Hudson, R. (2010). Resilient regions in an uncertain world: wishful thinking or a practical reality? *Cambridge Journal of Regions, Economy and Society* 3 (1), pp. 11–25. doi: 10.1093/cjres/rsp026.
- IPCC (2013). *Summary for policymakers*. Cambridge, United Kingdom: Cambridge University Press.
- Jerneck, A. and Olsson, L. (2008). Adaptation and the poor: development, resilience and transition. *Climate Policy* 8 (2), pp. 170–182.
- Joseph, J. (2013). Resilience as embedded neoliberalism: a governmentality approach. *Resilience* 1 (1), pp. 38–52.
- Justino, P., Litchfield, J. and Whitehead, L. (2003). The impact of inequality in Latin America. *Working Paper No. 21*, Poverty Research Unit: University of Sussex.
- Katz, C. (2004). *Growing up global: economic restructuring and children’s everyday lives*. Minneapolis: University of Minnesota Press.
- Klein, N. (2007). *The shock doctrine: the rise of disaster capitalism*. 1st ed. New York: Metropolitan Books/Henry Holt.
- Leach, M. (2008). Re-framing resilience: trans-disciplinarity, reflexivity and progressive sustainability – a symposium report.
- Leitch, A. M. and Bohensky, E. L. (2014). Return to “a new normal”: discourses of resilience to natural disasters in Australian newspapers 2006–2010. *Global Environmental Change* 26, pp. 14–26.
- Levi, M. (1996). Social and unsocial capital: a review essay of Robert Putnam’s making democracy work. *Politics & Society* 24 (1), pp. 45–55.
- Lorenz, D. F. (2010). The diversity of resilience: contributions from a social science perspective. *Natural Hazards* 67 (1), pp. 7–24.
- MacKinnon, D. and Derickson, K. D. (2012). From resilience to resourcefulness: a critique of resilience policy and activism. *Progress in Human Geography* 37 (2), pp. 253–270.
- Magis, K. (2010). Community resilience: an indicator of social sustainability. *Society & Natural Resources* 23 (5), pp. 401–416.
- McAnany, P. A. and Yoffee, N. (2010). Why we question collapse and study human resilience, ecological vulnerability and the aftermath of empire. In: *Questioning collapse: human resilience, ecological vulnerability, and the aftermath of empire*. Cambridge, New York: Cambridge University Press, pp. 1–20.
- Mohan, G. and Mohan, J. (2002). Placing social capital. *Progress in Human Geography* 26 (2), pp. 191–210.
- Nelson, S. H. (2014). Resilience and the neoliberal counter-revolution: from ecologies of control to production of the common. *Resilience* 2 (1), pp. 1–17.
- Nelson, D. R., Adger, W. N. and Brown, K. (2007). Adaptation to environmental change: contributions of a resilience framework. *Annual Review of Environment and Resources* 32 (1), pp. 395–419.
- Neocleous, M. (2013). Resisting resilience. *Radical Philosophy* 178.
- Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F. and Pfefferbaum, R. L. (2007). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology* 41 (1–2), pp. 127–150.
- O’Malley, P. (2010). Resilient subjects: uncertainty, warfare and liberalism. *Economy and Society* 39 (4), pp. 488–509.
- Okvat, H. A. and Zautra, A. J. (2011). Community gardening: a parsimonious path to individual, community, and environmental resilience. *American Journal of Community Psychology* 47 (3–4), pp. 374–387.
- Oliver-Smith, A. and Hoffman, S. (2002). Why anthropologists should study disasters. In: Oliver-Smith, A. and Hoffman, S. (eds) *Catastrophe and culture: the anthropology of disaster*. Santa Fe: School of American Research Press, pp. 3–22.

- Paton, D. (2006). Disaster resilience: building capacity to co-exist with natural hazards and their consequences. In: *Disaster resilience: an integrated approach*. Springfield: Charles C Thomas Publisher Ltd., pp. 40–67.
- Peck, J. and Tickell, A. (2002). Neoliberalizing space. *Antipode* 34 (3), pp. 380–404.
- Pendall, R., Foster, K. A. and Cowell, M. (2009). Resilience and regions: building understanding of the metaphor. *Cambridge Journal of Regions, Economy and Society* 3 (1), pp. 71–84.
- Pike, A., Dawley, S. and Tomaney, J. (2010). Resilience, adaptation and adaptability. *Cambridge Journal of Regions, Economy and Society* 3 (1), pp. 59–70.
- Porter, L. and Davoudi, S. (2012). The politics of resilience for planning: a cautionary. *Planning Theory & Practice* 13 (2), pp. 329–333.
- Reid, J. (2012). The disastrous and politically debased subject of resilience. *Development Dialogue* 58, pp. 67–80.
- Schott, R. M. (2013). Resilience, normativity and vulnerability. *Resilience* 1 (3), pp. 210–218.
- Shaw, K. (2012). “Reframing” resilience: challenges for planning theory and practice. *Planning Theory & Practice* 13 (2), pp. 308–312.
- Solnit, R. (2009). *A paradise built in hell: the extraordinary communities that arise in disasters*. New York, NY [u.a.]: Penguin Books.
- Sparke, M. (2008). Political geography – political geographies of globalization III: resistance. *Progress in Human Geography* 32 (3), pp. 423–440.
- Tidball, K. G. and Krasny, M. E. (2007). *From risk to resilience: What role for community greening and civic ecology in cities IN Social learning towards a more sustainable world*. In: Wals, A. (ed.) The Netherlands: Wageningen Publishers, pp. 149–164.
- Tobin, G. A. (1999). Sustainability and community resilience: the holy grail of hazards planning? *Global Environmental Change Part B: Environmental Hazards* 1 (1), pp. 13–25.
- Vale, L. J. and Campanella, T. J. (2005). *The resilient city: how modern cities recover from disaster*. New York: Oxford University Press.
- Wakefield, S. and Braun, B. (2014). Governing the resilient city. *Environment and Planning D: Society and Space* 32 (1), pp. 4–11.
- Walker, J. and Cooper, M. (2011). Genealogies of resilience: from systems ecology to the political economy of crisis adaptation. *Security Dialogue* 42 (2), pp. 143–160.
- Walker, B. and Salt, D. (2012). *Resilience practice: building capacity to absorb disturbance and maintain function*. Washington DC: Island Press.
- Walker, B., Holling, C. S., Carpenter, S. R. and Kinzig, A. (2004). Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society* 9 (2), p. 5.
- Walker, B. H., Anderies, J. M., Kinzig, A. P. and Ryan, P. (2006). Exploring resilience in social–ecological systems through comparative studies and theory development: introduction to the special issue. *Ecology and Society* 11 (1), p. 12.
- Welsh, M. (2014). Resilience and responsibility: governing uncertainty in a complex world: resilience and responsibility. *The Geographical Journal* 180 (1), pp. 15–26.
- Wilkinson, R. (2006). The impact of inequality. *Social Research* 73 (2), pp. 711–732.