Transcending the Adaptation/Mitigation Climate Change Science Policy Debate: Unmasking Assumptions about Adaptation and Resilience

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ABSTRACT

The two principal policy approaches to global climate change include mitigation and adaption. In recent years, the interest in adaptation and “resilience” has increased significantly in part because anthropogenic climate change appears unavoidable and mitigation agreements are difficult to achieve. This article takes a critical look at the emerging discourse over climate change adaptation and resilience. By drawing upon critiques of environmental resource management and adaptive comanagement, this paper argues that taking the concept of adaptation for granted as an appropriate bottom-up strategy for coping with anthropogenic climate change not only ignores the political and economic contexts in which this environmental strategy developed, but might also unintentionally subvert the vulnerable communities it intends to benefit. Using an ethnographic case study of the 2004 Boscastle Harbour flood in North Cornwall, England, this paper explores the paradoxical way in which adaptation and resilience work within the apparatus of the neo-liberal state, which aims to shift responsibility for social and environmental problems to the individual. By better understanding the political and economic processes embedded in the concepts of adaptation and resilience, researchers will be more effective at finding equitable solutions to human ecological problems.

Adaptation to the adverse effects of climate change is vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts (United Nations Framework Convention on Climate Change).

1. Introduction

At present the two principal policy approaches to global warming include actions to reduce the causes of climate change (mitigation) and adapting to the impacts of climate change (adaptation) (Houghton et al. 2001; Metz et al. 2007). The kinds of policy agendas that mitigation and adaptation respond to are somewhat distinct. Whereas climate change mitigation is about preventing further global climate change, climate change adaptation is about coping with local climate change. Until recently mitigation was commonly accepted as the dominant paradigm, but adaptation policies are receiving more attention in part because anthropogenic climate change appears unavoidable (Adger et al. 2009; Hulme 2009; Nelson et al. 2007; Orlove 2009). It should come as no surprise then that adaptation and its correlative “resilience” in the context of global climate change are increasingly the object of anthropological research given our longstanding interest in human adaptation to environmental uncertainty (e.g., Crate and Nottall 2009; Finan and Nelson 2009; Orlove 2009; Roncoli et al. 2009). Roncoli et al. (2009), for instance, assert that anthropology as a discipline “needs to recognize that participation in climate policy debates and efforts to build capacity for adaptation at all levels...are central to Anthropology’s intellectual mandate and field-grounded epistemology” (Roncoli et al. 2009, p. 105). Accordingly, anthropologists are increasingly looking at adaptation not only as an interdisciplinary research opportunity but also as an inevitable and necessary approach to climate change, one that has the potential to involve local people (in particular indigenous people) in self-determined and important ways.

The intellectual union between anthropology and climate change adaptation may seem straightforward. But this paper argues that anthropologists have generally...
failed to critically analyze the deeper assumptions that lie behind adaptation, resilience, and mitigation despite criticisms leveled against these terms from within the discipline itself. Paul Nadasdy (Nadasdy 2005, 2007), for example, has highlighted the unintended political consequences of environmental adaptive comanagement discourse and practice, which merges participation with ecological precepts of adaptation and resilience. Nadasdy (2007) argues that this most recent resource management paradigm is rooted in political and economic processes of capitalism and colonial-style relations that have plagued environmental management since its inception. The history of adaptation as it relates to climate change is well documented by Ben Orlove (Orlove 2009). Orlove raises concerns about not only the “conceptual baggage” that accompanies the concept of adaptation, but also how adaptation at times serves larger institutions and interests rather than local people (Orlove 2009, p. 131).

Elsewhere critiques about the political economic and historically contingent aspects of adaptation, resilience, and mitigation have recently emerged. For instance, Boykoff et al. (2010) suggest that climate mitigation is rooted in outmoded ecological theories of equilibrium and stability popular until the 1980s, the same era in which the World Meteorological Organization (WMO) considered the threat of global warming and advanced its climate stability framework through the Intergovernmental Panel on Climate Change (IPCC). In their critical analysis of resilience as a quality of adaptation, Matthew Turner (Turner 2010) and Jeremy Walker and Melinda Cooper (Walker and Cooper 2011) assert that the concept of resilience is too abstract to be meaningfully applied. Nonetheless, resilience and adaptation are so ubiquitous in the social sciences and policy communities that nearly all aspects of global finance and governance now include them. Indeed, as this paper will attempt to show, adaptation and resilience discourse fit within a broader set of globalization processes; in particular, the neoliberal retreat of the state in which responsibility for social and environmental problems are shifted to the individual. In Britain, for example, improving “flood resilience” is a key objective of the Flood Risk Management (FRM) approach to hazards (Deeming et al. 2011). The FRM encourages people to take personal responsibility for adapting to flood risks often linked to climate change.

In this article, I reconsider the way anthropologists and social scientists use the terms adaptation, resilience, and mitigation. To that end, this article addresses the largely unexamined political economic implications of adaptation and resilience and how taking these concepts for granted might unintentionally subvert research efforts intended to benefit vulnerable communities. I begin with two theoretical discussions. The first deals with the sociocultural framework of mitigation, adaptation, and resilience and how these ecological models have been variously integrated into environmental management. The second deals with critiques of resource management and the integration of traditional ecological knowledge, illustrating the relevance of this literature for climate researchers. In the section that follows I provide an example of the U.K. Environment Agency (EA)’s use of adaptation and resilience in its climate change rhetoric in the years following the August 2004 Boscastle Harbour flood in Cornwall, England. I attempt to demonstrate why local people may not share the economic and political interests served by an adaptation approach. The article concludes with some wider reflections on how adaptation and resilience fit within the neoliberal state, and how by understanding this political economy, researchers can reorient their approach to adaptation and work toward more equitable human ecological policies.

2. The folly of stability

Both the frameworks of the IPCC, which assesses scientific, technical, and socioeconomic information relevant to anthropogenic climate change, and the United Nations Framework Convention on Climate Change (UNFCCC), which drafted the first international environmental treaty to stabilize greenhouse gas concentrations in its Kyoto Protocol of 1997, include concepts of mitigation and adaptation as responses to climate change. Climate mitigation focuses on efforts to stabilize global climate change by reducing greenhouse gas emissions through regulatory frameworks and carbon markets (e.g., Stern 2006). The concept of adaptation, by contrast, focuses on ecosystem variability and human flexibility and draws upon ecological principles of disequilibrium, uncertainty, and resilience. Although mitigation and adaptation appear as two distinct approaches to the problem of climate change, one based on equilibrium and the other variability, I suggest both are embedded in sociopolitical systems that obscure and reinforce asymmetrical relations of power across different communities. The reader should note, however, that the purpose here is not merely to argue that mitigation and adaptation are politicized endeavors (see Demeritt 2001; Pielke 2007); instead, the goal is to explain what kind of politics might be occurring and how the concepts of adaptation and resilience support specific political agendas. To begin, I briefly look back at how equilibrium led to resilience thinking in the natural and social sciences.

As many climate researchers now agree, equilibrium in climate is no more plausible than equilibrium in ecosystems.
The adoption of “resilience” as a management technique transformed the science of environmental management during the 1970s and 1980s; and as a result it seems highly unlikely that the WMO and United Nations Environmental Programe (UNEP), whose collaboration produced the IPCC in the late 1980s, did not elicit these conceptual frameworks in its early and ongoing assessment of global warming. The parallels between conventional ecological management and climate change mitigation, and adaptive management and climate change adaptation, should already be apparent. On the one hand, mitigation manages for stability and reinforces equilibrium thinking. On the other hand, climate change adaptation accompanies ideas of instability and manages for what the IPCC defines as the “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities” (Levina and Tirpak 2006, p. 6).

Now that adaptation and resilience have largely eclipsed mitigation as a near-term strategy for coping with climate change, the time has come to take a serious look at the challenges of managing for resilience. To do this, I examine the most obvious model available to us—adaptive resource management. In particular I consider the integration of traditional ecological knowledge (TEK) into environmental resource management schemes.

3. Managing for resilience

Transforming the idea of resilience into practice presents significant challenges in part because the concept itself is so abstract. Although adaptation and resilience are ubiquitous in the climate change literature, what they mean in practical terms is not always apparent. Nadasy (2007) has outlined a series of complex realizations that proponents of adaptation went through to achieve the goal of managing for resilience in socioecological systems. Foremost was the need for resource managers to shift their efforts away from conventional techniques that sought (unsuccessfully) to maintain stability in the environment, toward enhancing resilience by allowing natural variation to occur. Next was providing a mechanism for social learning that could support highly flexible institutions able to adapt to constant changes in socioecological systems. In other words, “learning-by-doing,” the conceptual basis of resilience, became a management strategy for unpredictable and highly variable socioecological problems. Finally, to achieve their aim on the ground, proponents of adaptive management began to look for inspiration in the practices of indigenous peoples, a process that in turn led to the idea of “adaptive co-management,” the merging of cooperative management (comanagement) and adaptive management (Nadasdy 2007, pp. 210–211).

Although local empowerment accompanies much of the rhetoric about comanagement and now adaptive co-management, critics of participation discourse have shown that these types of participatory approaches are deeply embedded in relations of power (Agrawal 1995; Cooke and Kothari 2001; Few et al. 2007; Nadasdy 2003). Participation arose during the 1970s and 1980s as an...
alternative to centralized top-down models of development. Believing that bottom-up participatory approaches would both empower local people and be more sympathetic to local needs, proponents of participation have assumed that when cooperative management fails, the problem is a technical rather than political issue (Agrawal 1995; Nadasdy 2005). On the contrary, the inherent political nature of participatory approaches in both development and resource management is widely cited in the literature. Critics of comanagement complain that community-based participatory models, which endeavor to integrate so-called “indigenous knowledge,” “local knowledge,” “traditional ecological knowledge,” or “experiential knowledge” into existing institutional structures, merely reproduce the views of government officials and extend the power of the state (Nadasdy 2003, 2005).

In recent years, anthropologists and human geographers have examined ways to increase the adaptability and resiliency of communities vulnerable to climate change by incorporating local knowledge. However, this focus on ecological knowledge and adaptive practices is one in which researchers assume adaptation is inherently good, while ignoring how this concept serves its own set of political interests. A simple internet search for “indigenous knowledge of climate change adoption” yields more than fourteen pages of links to articles, proceedings, and opinions on the topic. More striking perhaps is the interdisciplinary journal Climatic Change, which devoted its May 2010 edition to explorations of indigenous people’s knowledge of climate and weather, assessing parallels between indigenous and scientific knowledge, and participation—all of which underscore the academic interest in integrating TEK with climate change discourse (Green and Raygorodetsky 2010).

Yet by building upon the insights of Nadasdy (2005, 2007), several problems emerge with this approach. First, the integration of local knowledge into frameworks of climate change adaptation and resilience might unintentionally resurrect stereotypes about the ecological wisdom and knowledge of indigenous peoples [see Krech (1999) for “ecological Indian” and noble savage]. Second, proponents of adaptation might “valorize” one set of socioecological interactions over another based on an ecological ideal (Nadasdy 2007). This is indicated by environmental resource management that originally pursued equilibrium as an ideal natural state then turned to adaptation and resilience on the same grounds. According to Nadasdy (2007), equilibrium, adaptation, and resilience are all reconstructions of a “land ethic” deeply rooted in a particular set of western social and political beliefs and values. Finally, the decision to select and pursue one ecological state over another is fundamentally a political decision since such an endeavor is possible only in the context of the social relationships and capitalist structures that support it (Harvey 1993). By taking this political economy for granted, the most socially and politically marginalized people will be ignored even when their practices qualify as adaptation and the policy goal is resilience. At the same time, marginalized groups will have little investment in maintaining the resilience of systems that merely produce the status quo power of elites. These political dynamics are evidenced in the following case study of Boscastle.

Scholars of environmental management and TEK offer vital insights into how the integration of local knowledge and climate change policy might unintentionally exacerbate misunderstandings and inequities that span different communities at multiple levels. Climate researchers should be alert to this body of literature. As will be seen in the case of the Boscastle Harbour flood disaster, the attempt at community participation on behalf of the U.K. Environment Agency, combined with the political interests served by adaptation rhetoric, led to the increased marginalization of local Cornish people in the village. I examine how adaptation largely accommodates the needs and perspectives of the tourism industry, business interests, and government officials.

4. The case of the Boscastle Harbour flood disaster

On 16 August 2004, the ancient and ruggedly picturesque seaside village of Boscastle in North Cornwall, England, experienced a massive flash flood (Fig. 1). Following an unusually powerful thunderstorm that dumped 75 mm of rain in only two hours at the head of the Valency catchment, an estimated one hundred tons of water per second funneled through the village. Holidaymakers, shopkeepers, and residents clamored to higher ground and watched as the surge of water destroyed buildings, uprooted trees, and swept cars and caravans out to sea. In the years since the flood, Boscastle has been used by the U.K. Environment Agency, the National Trust, Climate SouthWest, the worldwide design group Halcrow, and other organizations as an example of Britain’s successful adaptation and resilience measures (e.g., Cooper and Farnell 2009; Roseveare and Trapmore 2008). While all of these agencies are not linked to climate change management per se, each has taken on climate change issues to illustrate their overarching commitment to sustainable development in light of the risks associated with climate change.

On the day of the flood I was in the moorland village of Blisland located 10 miles south of Boscastle, where I was carrying out an ethnographic fieldwork project on cultural constructions of weather and climate from...
September 2003 until May 2005. Each year since I have returned to North Cornwall to visit and do follow-up research. Much of the information contained here I drew from several years of participant observation and conversations with local Cornish people in Boscastle and Blisland. I also conducted interviews with Met Office climate scientists, Ministers of Parliament, British Broadcasting Company (BBC) weather forecasters, EA officials, and nongovernment agents in the months following the flood. I have elsewhere provided a more thorough account of local Cornish adaptive practices in Boscastle and the social and cultural complexities of the village (Jennings 2009, 2010). In the interest of space, only a limited summary will be presented here.

The 2004 Boscastle Harbour flood was by all accounts a dramatic event that attracted international news coverage and for months became an obsession of the British media and public. In the days following the flood, a barrage of tabloid and broadsheet headlines from The Guardian and elsewhere warned that “Britain should expect more dangerous flash floods, catastrophic rain and hail storms, droughts and heatwaves from the rapid changes in rainfall patterns brought by global warming.” But the lack of knowledge about Boscastle among recently settled non-Cornish residents, the national press, and many government and county officials led to misunderstandings about the history of flooding in Boscastle and its coexisting cultural communities. For instance, although the Boscastle flood was frequently linked by the media to global warming, flooding in the Valency Valley where Boscastle is located is not an unusual event, and many local Cornish people contend that the 2004 flood was the result of inept government land management practices, as much as from natural causes or extreme weather associated with climate change.

According to geological investigations by the coordinator for Regional Geological Sites (RIGS), flash flooding has occurred in the Valency Valley since the Pleistocene (J. Anderson 2007, personal communication). Boscastle forms a natural harbor and both the Valency and Jordan rivers descend abruptly into the lower portion of Boscastle known locally as “Bridge” and “Quaytown,” which together form the tourist center of the village. The original High Street of Boscastle is located in “Top Town,” an area located well away from the valley bottom and recognized by local Cornish people as the “true heart” of the village. In recent times, Boscastle experienced flooding in 1882, 1894, 1903, 1926, 1940s, 1950, 1958, 1963, 2004 (Clark 2006), and most recently in 2007 when some businesses in Bridge were...
submerged under two to three feet of water. Yet the 2004 flood is considered worse than any previous or subsequent event to date. Based on modeling data by the Institute of Hydrology at Wallingford, the EA concluded that the 2004 flood was a 1 in 400 year event; a conclusion that authorized the Valency Flood Defense Scheme, a project intended to minimize the risk and damage caused by future flooding. The project got fully underway in January 2007 at an initial cost of £4.6 million (U.K. pounds) (Environment Agency 2005).

Boscastle today is a village of second homes, holiday lets, tourist shops, and restaurants. Of the approximately one thousand full and part-time residents currently living in Boscastle, fewer than two hundred are Cornish born in the area. These figures reflect what Cornish Studies scholars regard as a trend that has shaped the indigenous Cornish–Celtic ethnic minority in Cornwall (Deacon et al. 1988, 2003). Poverty and marginalization have long been an unmistakable part of working class Cornish regionalism and identity. The modern history of Boscastle is one of profound social and economic transformation that took place throughout Cornwall beginning with the region’s early ascent into industrialism during the eighteenth century, to its present day tourism industry that followed Cornwall’s economic decline and era of emigration during the late nineteenth century. Like other seaside villages in Cornwall, Boscastle went from being a manorial estate, Cornish fishing village, and harbor for trade and commerce, to one of Britain’s beloved National Trust sites visited by thousands of tourists each year and inhabited mostly by non-Cornish retirees, part-time shopkeepers, and second-home owners from “upcountry.” With the exception of agriculture, the traditional Cornish industries of mining and fishing have largely disappeared from Cornwall. Local Cornish people whose families originate from Boscastle lament that they can no longer afford to live there (Knight and Knight 2004).

Tourism makes up more than a quarter of the Cornish economy and is heavily subsidized through indirect government taxation. Because tourism is regarded by many government officials and county councilors as integral to the overall economic improvement of Cornwall today, questions about the extent to which tourism might have played a role in the 2004 flood were eclipsed by concerns about how the flood would affect tourism in future. In the aftermath of the flood, business groups and county agents focused explicitly on improvements that would increase tourism to “strengthen the local economy” (Roseveare and Trapmore 2008, p. 304). Proponents of tourism such as the Cornwall Tourist Board assert that because Cornwall is one of the poorest counties in the UK, the tourist industry provides a vital source of revenue and jobs. Even though economic alternatives to tourism are difficult to imagine in Boscastle, some Cornish people are skeptical about the benefits tourism brings to their community. Critics of tourism in Cornwall argue that tourism provides only low-skill, low-wage jobs, that tourism undermines traditional Cornish industries, and that the majority of tourist-related enterprises are owned by non-Cornish people who mostly live outside Cornwall (Andrew 1997; Deacon et al. 1988).

Tourism over the years has brought about many physical changes to Boscastle that some local Cornish believe contributed to the destructiveness of the 2004 flood. For example, Roy Pickard, who was born and still lives in Boscastle, remembers how his grandfather (a workman for the manor) managed the historic watercourses of Boscastle. According to Mr. Pickard, development and change of occupancies have gradually altered or destroyed many of the historical watercourses of Boscastle including culverts, slipways, meadows, and hedges. In addition to building and preserving these traditional structures, manor workmen carried out annual maintenance of the riparian zones throughout the Valency catchment in an effort to prevent the build-up of dead trees and other debris that might block drainages or create dams during peak runoff periods, a practice that diminished after Boscastle ceased to be a manor in 1946.

Among the most obvious physical changes aimed at accommodating tourism in Boscastle was the North Cornwall District Council’s (NCDC) conversion of the Manor Meadows, a natural floodplain traditionally left undeveloped and used for village fetes, into a tourist car park between 1970 and 1973. The NCDC expanded the car park onto National Trust land in 1981. According to people with whom I spoke, the original car park destroyed a system of hedges and banks that slowed runoff and collected debris that washed down the River Valency during flash floods. Debris dams were at the center of disputes between the EA and some Cornish residents after the 2004 flood. The volume of dead trees, brush, and cars that washed down the Valency River and became lodged against the two bridges in the lower village resulted in a massive water surge that engulfed structures throughout the valley bottom. Locals maintain that debris dams were a major factor in the 2004 flood, thus implicating the EA in its failure to maintain riparian zones in the Valency catchment. The EA in its defense cited the conclusions of hydrology consultants HR Wallingford (HR Wallingford 2005), which claim flooding would have occurred even if the bridges had not been blocked by debris during the flood.

The EA’s Valency Flood Defense Scheme, carried out in partnership with Halcrow (lead designer), led to a
number of local controversies that began long before the project got underway in 2007. One area of disagreement, which sometimes pitted business owners against local Cornish people, involved a third expansion of the tourist car park as part of the EA’s flood alleviation strategy. According to the EA, extending the car park would make space for sediment and debris during extreme runoff (Environment Agency 2011). This idea struck some local people as hypocritical given their view that the car park was built on a flood plain and played a major role in the flood. Another controversy surrounded the replacement of the lower harbour bridge, which despite overwhelming agreement in the village that it should be rebuilt in a manner sympathetic to the architectural heritage of the village, was replaced with a modern-style steel and concrete structure. The new bridge designed by Halcrow intended to increase the flow capacity of the river. Less controversial components of the Flood Defense Scheme included deepening the river channel, installing a flood relief culvert, and several new sewage pumping stations.

Yet the context of disagreements over the Valency Flood Defense scheme must be understood in light of the efforts of the EA to involve local people in decision making and the kinds of unequal social relations that exist in the village. Despite the significant criticisms of participation already mentioned in this paper, participation remains an often repeated objective in U.K. environmental management, and Boscastle was no exception (Few et al. 2007; O’Riordan and Ward 1997). In the months following the flood, the NCDC in partnership with the EA sent out a survey asking Boscastle residents about the flood and what changes they wanted to see in the village since much of Bridge and Quaytown needed to be rebuilt or undergo major regeneration. Despite the well-intentioned effort of the NCDC and EA to involve local people, it is noteworthy that the survey did not differentiate Cornish locals and non-Cornish incomers. Consequently, the survey fails to indicate different assumptions about socioecological relationships that might accompany long-term residency in Boscastle [for survey see Atlantic (2005)]. The EA also conducted formal exhibitions to inform residents about the details of the proposed Valency Flood Defense Scheme. These exhibitions served as a forum to gather public input into the bridge design that would replace the historic lower bridge destroyed by the flood.

While formal exhibitions and household surveys appeared to engage Boscastle residents, the reality from the perspective of local Cornish proved otherwise. During the recovery phase of the 2004 Boscastle flood, many Cornish people felt themselves invisible to EA officials, in part because of thorny historical relations between the Cornish and English, but also because government and county officials (perhaps unconsciously) found it easier to engage with incomers whose interests and concerns about the flood’s impact on tourism approximated those of the County Council and the EA. Local Cornish people, some of whom have considerable historical knowledge about the hydrology of the area, were therefore at a distinct disadvantage when it came time to give input or make decisions about future flood schemes in their own district. From their perspective, their opinions were simply ignored.

As I have described elsewhere (Jennings 2009), the EA’s attempt to involve local people left many Cornish feeling resentful and excluded. A local woman explained to me that she and her husband were in fact “disillusioned” by the questions asked in the household survey and during exhibitions. In her words, they “didn’t ask the right questions...they asked questions that villagers would not have wanted asked.” By way of illustration, she explained as follows: “They would ask, ‘Do you want a pink bridge or a blue bridge?’ They didn’t ask, ‘Do you want a bridge?’” She argued that the questions posed by officials merely gave the appearance of choice. Not only did some Cornish people feel that government officials failed to consider their views regarding the 2004 flood, they had little expectation that government officials would. “It’s a bit of a waste of time filling it [the questionnaire] out because we’ve seen it all before. If they don’t get the answer they want, they find reason to ignore it.” As might be expected, the assumptions that preceded any attempt by the EA to involve local people were based on tourism and could not therefore seriously take into account the knowledge obtained from local Cornish people.

In 2006, the EA approved an additional extension of the tourist car park as part of the Valency Flood Defense Scheme. During a visit to Boscastle in May 2010, I was taken aback by the size of the car park in relation to the overall size of the village. Around that same time I received a note from a local woman with whom I have maintained contact since the 2004 flood. She wrote that “Many locals don’t ‘recognise’ the lower village as part of their environment and no longer go down there.” Like other narratives about Boscastle, the 2004 flood has become part of Boscastle as a tourist attraction. In the new Boscastle Visitors Centre, which was relocated after the original building was destroyed by the flood, visitors can now watch a video exhibition of the disaster as it unfolded.

When the Valency Flood Defense Scheme and regeneration projects were officially completed at a cost of £10 million (U.K. pounds) in October 2008, many business people and property owners were pleased with the
changes to the village. According to Adam Luster, writing for the *Telegraph*, many in Boscastle “believe that the village has not just risen from the flood. It has improved—in spirit, organisation and appearance” (*Telegraph*, 25 September 2008). In May 2011, a less enthusiastic summary was put this way: “Tarting up Boscastle for tourism has deprived local people of their communal fields [Manor Meadows].” The Cornish couple who said this to me went on to suggest that if the same storm that occurred on 16 August 2004 took place today, Boscastle would flood just as it did before. Understanding why Cornish people have little investment in the apparent success of the Flood Defense Scheme and regeneration projects requires an examination of adaptation and resilience in its larger sociopolitical context.

Although the Valency Flood Defense Scheme was designed to alleviate flooding risk and damage, the project took on a number of political causes that correspond with the EA’s economic and climate change agendas. In addition to the apparent fact that some of the measures associated with the flood defense scheme were directed at improving conditions for tourism, the project also became a poster child for climate change adaptation and resilience in the United Kingdom. Even though the EA did not explicitly link the Boscastle flood to climate change, it frequently used Boscastle as an example of what could be expected “as climate change takes hold in the future” (Drury 2007, p. 1). Climate SouthWest, for instance, which looks at the effects and impacts of climate change and develops adaptation responses across different sectors of society, touted the EA’s flood alleviation scheme in Boscastle as a model of the United Kingdom’s successful climate change adaptation efforts. Climate SouthWest, formerly known as South West Climate Change Impacts Partnership (SWCCIP), began in 2001 as a group of key stakeholders who manage research and produce and disseminate information about climate change in the United Kingdom (Climate SouthWest 2010).

Boscastle has likewise been used to talk about successful resilience in the United Kingdom. For example, in a series of case studies posted by Climate SouthWest on their Web site, the group emphasizes that Boscastle businesses are now more flood resilient, and there will be far fewer disruptions to businesses and customers if flooding were to occur again. Resilience is increasingly at the center of environment and flood risk policy in Britain. Following the 2007 “summer of floods,” local government official, Sir Michael Pitt, published a 500-page independent report known as the Pitt Review. Among the 15 urgent recommendations summarized in the Pitt Review for the U.K. government, the report recommends that “members of the public increase their personal state of readiness and resilience to floods by following the Environment Agency’s practical advice” (Pitt 2008, p. 455). Resilience in this case refers to, among other things, having adequate insurance, knowing the flood risk of one’s property, and basic emergency procedures such as shutting off water, gas, and electric supply.

I argue, however, that resilience has a larger political role in the neoliberal state than flood management. Deeming et al. (2011) have analyzed resilience as a new approach to flood risks in the United Kingdom. According to the authors, past flood defense measures involved engineering and instrumental approaches that relied upon the belief that science and technology could counter the vagaries of nature. These attitudes resulted in the expansion of homes onto flood plains and coastal areas across the United Kingdom. But following a growing list of defense barrier failures, severe flooding, and the inability of the government to pay for structural defenses, a new approach based on adaptation and resilience has now emerged. The recognition by the government that not all floods can be prevented has led to the Flood Risk Management (FRM) approach, which focuses on improving flood resilience by making the public better prepared for floods and encouraging them to take responsibility for adapting to flood risks.

The most striking aspect of this effort to shift responsibility for environmental problems to the individual is the way in which it signals an essential characteristic of neoliberalism. As David Harvey (Harvey 2005) has succinctly observed, neoliberalism is not only the withdrawal of the state from all social obligations, a process that began under Margaret Thatcher and Ronald Reagan, but a conscious reassertion of class power. Just as important, Harvey (2005) argues that the market-based approach of neoliberalism has failed at virtually every level to produce the economic benefits it promises to society. By encouraging people to take personal responsibility for adapting to flood risks (and other social and ecological problems), the U.K. government has been able to cut flood defense expenditures and allow the market-based insurance industry to be the primary resource for people living in flood prone areas. Yet the obvious concern here is how such a system impacts the poorest and most vulnerable segments of society that cannot afford insurance or live in places that do not qualify for coverage because they have been built, with government approval, on flood plains (Deeming et al. 2011).

Insurance coverage was, and remains, a major concern for most people in Boscastle after the 2004 flood, especially those living in the valley bottom. According to Halcrow and the EA, the Valency Flood Defense Scheme provides a 1 in 75 year standard of defense against flooding, the risk factor allowed by the insurance industry. But Colin Clark (Clark 2006), a historical hydrologist
from the Charlton Hill Research Station, Somerset, concluded that the flood scheme leaves Boscastle vulnerable to floods greater than 1 in 35 years. Local historian and author Anne Knight took the unusual step of writing the Chief Executive of the Association of British Insurance (ABI) about this discrepancy. In 2007 she showed me the response that stated, the ABI “follows the directions of the Environment Agency” and “does not set policy.” Not having much faith in the government, Mrs. Knight is left wondering if insurance will be available to people when Boscastle floods again.

By acknowledging how the language of adaptation and resilience are being integrated into a neoliberal retreat of the state from social and environmental problems, researchers can imagine ways to counteract the kinds of policies that might further marginalize groups already vulnerable to climate change. I consider these opportunities in the following section.

5. Discussion: Adaptation and resilience

This article began with the assertion that anthropologists have used the concepts adaptation and resilience without sufficient regard for their political implications. Anthropologists have had a long and varied interest in human ecological adaptation that extends back to the development of the discipline in seminal works by Boas (1911), Malinowski (1922), and Rappaport (1984). According to Janssen and Ostrom (2006), the concept of adaptation itself owes much of its legacy to anthropology even though resilience derives from population ecology and ecosystem management. For three decades anthropologists have concerned themselves with how climate acts as a constraint on human cultural and behavioral processes. Human adaptability research throughout the 1980s and 1990s vastly expanded our understanding of how people ameliorate the effects of environmental variability, while exposing inequitable social policies that undermine local adaptations to ecological uncertainty (e.g., Halstead and O’Shea 1989). Perhaps because of this background, anthropologists have largely taken adaptation for granted, viewing it as a desirable bottom-up strategy for coping with the uncertainties associated with climate without much critical reflection about the political implications of adaptation discourse. More troubling still, efforts to increase the adaptive capacity of communities vulnerable to climate change might paradoxically reinforce and legitimize existing socioecological and political relationships; relationships which are the result of capitalist processes.

Climate researchers increasingly acknowledge that stabilizing the climate through international mitigation agreements is perhaps a laudable aim but one impossible to achieve and fulfill. As climate adaptation increasingly dominates policy debates about how best to cope with climate change, anthropologists and social scientists need to be engaged in those debates. And so the inevitable challenge to the concerns I have raised in this paper might be the following: “if not adaptation, then what?” In my view, this is the wrong question to ask because the only alternative to adaptation, to put it crudely, is extinction. The question we need to ask then is not will people adapt or even how will they adapt, but what are they being asked to adapt to, and who decides? This is fundamentally a political question.

In the Boscastle case study, I used the insights of scholars of resource management and TEK to analyze the 16 August 2004 flood and the social and political responses to the flood in the years since. I examined the problems and paradoxes of participation and demonstrate how the rhetoric of participation can sometimes exclude the very people who have the most direct experience with ecological adaptation at the local level. I also looked at implicit assumptions about climate change and how the rhetoric of adaptation in Boscastle accommodated the needs of the tourism industry and the interests of business leaders, private enterprises, and public agencies. More importantly, however, are the issues of political economy and the subtle (and sometimes not so subtle) ways that adaptation and resilience serve established power structures; most notably, the neoliberal state whose interests reflect private property owners, businesses, multinational corporations, and financial capital (Harvey 2005). We should not be surprised then, when socially and politically marginalized groups are not invested in maintaining the resilience of socioecological systems for which they have little choice.

I argue that adaptation and resilience are useful in globalized policy discourses not because these concepts are well understood, but on the contrary, because they are exceedingly abstract. The proliferation of adaptation and resilience language in the climate and policy literature sometimes appear as landscape terms of art that serve environmental design companies in a global arena (e.g., Cooper and Farnell 2009). But Carpenter et al. (2001) have posed an important question rarely answered by researchers or policy-makers—precisely how is a society resilient? We should be concerned about other unexamined political aspects of adaptation and resilience as well. Matthew Turner has asked if the “fuzzy thinking” about vulnerability and resilience is a method of engendering government sanctioned forms of social cohesion to obscure the kinds of conflicts and dramatic transformations people face from climate threats (Turner 2010, p. 5).

If the political view of adaptation and resilience is resistance to change, how does this enable and embody
the status quo and what are the implications? The insights of Ben Orlove are especially instructive here. Orlove (2009) has shown that adaptation serves bureaucratic institutions precisely because it preserves the status quo. Orlove suggests that the “loose, multifaceted quality” of the term adaptation allows organizations to function in ways that maintain conditions as they have always been while at the same appearing to be on the cutting edge of current research and policy trends. For the people working within these organizations, adaptation is more likely to represent a familiar shift in “fashion” rather than substantive structural change (Orlove 2009, 158–159). So although the concepts of adaptation and resilience are often too abstract to be meaningfully applied in practice, they are very useful for reinforcing existing political structures. The obvious beneficiaries of these processes are those who hold power.

On a sunny and brisk day in late May 2011, I drove along the twisting narrow lanes of North Cornwall to have a pub lunch with a Cornish couple I know in Boscastle. Aside from the barman, we were the only customers in the pub at that hour of the day. We discussed any number of things, but our conversation eventually turned to adaptation because I was curious what they thought the concept meant and what it might look like to local people. Without much hesitation, they explained that it probably means “we would have to give up something,” for example, not building on a floodplain. They acknowledged that “we need to live with what we can’t control, and only do so within monetary constraints.” What struck me most about their comments was the sense of change captured in their idea of adaptation. I thought then of Peter Timmerman’s description of adaptation and resilience as the learning process that results from encounters with uncertainty. It is difficult to see the status quo in such an idea.

6. Conclusions

In this paper I have challenged the way anthropologists and social scientists conceptualize and use the concepts of mitigation, adaptation, and resilience. I have attempted to demonstrate that adaptation is not always what we think because people are adapting to conditions not presently being examined by researchers. I have argued that we need to examine adaptation and resilience as a discourse used to obscure a wider set of neoliberal policies that, if allowed to, might place vulnerable groups at greater risk in the face of climate change. If a counter to neoliberal doctrine is to be imagined, a focus on justice and achieving ethical human environmental relations should be regarded as vital. To transcend the dualistic dead end between climate change adaptation and mitigation or the tendency to play one approach against the other, researchers need to examine the implicit assumptions embedded in these approaches. This paper is an effort to call attention to the opportunities that lie ahead.

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