Commentary

Close to the edge, down by the river? Joining up managed retreat and place attachment in a climate changed world

Introduction

Climate change is disrupting and will increasingly disrupt the geographies of people, places, and spaces. Countries such as Kiribati, originally inhabited by the Micronesians between 3000 BC and 1300 AD, and towns such as Shishmaref, Alaska, a traditional Inupiaq Eskimo fishing village with 400 years of settlement are planning for relocation. Vulnerable city and other authorities that are beginning to plan for 'managed retreat'[1] (the relocation of communities and ecosystems) are only now starting to insert limited policy interventions such as setback regulations into their plans. In this commentary we begin to problematize the way most planners and policy makers are currently thinking about the managed retreat of people, cherished places, and spaces. We suggest how, through psychology research and literature, policies and plans for managed retreat and place attachment should and could become joined up.

Our argument is that, if future policies and plans for managed retreat are to be implemented successfully, a great deal of further work is required since in focusing on the more ecological, technical, and economic that is, *physical* aspects of relocation, they have neglected important *psychological*, *symbolic*, and particularly *emotional* aspects of healthy human habitats—described by environmental psychologists as 'place attachment'—and that a failure to address this crucial qualitative aspect of relocation may fundamentally undermine wider policy and planning initiatives on adaptation to climate change

Theorizing managed retreat

Symbolic and emotional aspects of habitation have been studied across several social science disciplines including environmental psychology, leading to the development of literatures on concepts of place attachment, place identity, and home. Brown and Perkins (1992) described place attachment as "positively experienced bonds, sometimes occurring without awareness, that are developed over time from the behavioural, affective, and cognitive ties between individuals and/or groups and their socio-physical environment" (page 284). As well as possessing emotional bonds, cherished or favourite places (Devine-Wright, 2007) are often bound up in locational aspects of the self—what has been described as 'place identity' (Proshansky et al, 1983)—since it has been shown that particular locations can help to maintain positive personal and social or group identities (Devine-Wright and Lyons, 1997). The home is a particularly significant kind of place (Easthorpe, 2004) laden with symbolic and emotional, as well as functional or instrumental, dimensions, implying a safe haven or space where individuals may expect to exert some sense of control or ownership (Depres, 1991; Moore, 2000). Disruption to the home or to other places which people feel attached to, whether caused by burglary, conflict, or environmental change, can lead to feelings of grief, loss, and anxiety, and disrupt networks of social support of particular value for low-income communities (Brown and Perkins, 1992; Fried, 2000). In some cases, as Fullilove (1996) has argued, relocation or forced migration, from the enslavement of Africans, the dispersion of the

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[1] Managed retreat is called 'managed realignment' in the UK (Department for Environment, Food and Rural Affairs and Environment Agency, 2002).

aborigine in Australia, the mass forced migrations in the former Soviet Union and China, to the forced relocation resulting from urban or rural disruptions can result in psychiatric problems as new or temporary settlement locations are proven to be difficult to familiarize and manage, leading to problems of nostalgia, disorientation, and alienation, or what Fullilove (1996) calls 'rootshock'.

Burley et al (2007) note that places are largely socially constructed expressions of the self and that what we see in our surroundings reflects the characteristics, beliefs, and elements that we see in ourselves. In recognizing such a link between surroundings and the self, it can be argued that any change in our surroundings whether natural or forced, will spark some form(s) of psychological reaction(s) amongst the inhabitants of the affected community. Most current managed retreat/forced relocation programs have yet to acknowledge this.

However Burley et al (2007) did find that understanding how communities relate to their space(s) and place(s) can significantly reduce conflict between local authorities, scientists, and communities as they implement restoration and/or managed retreat programs. Through a series of interviews with residents from several coastal communities in Louisiana, researchers discovered that individuals felt largely shut out of the restorative process by local officials who listen only to scientists and government agencies when making decisions about how to manage the land. People who had been living within the coastal region for generations and watching the land of their community disappear into the sea for decades viewed themselves as possessing a unique and intimate knowledge of their local ecology that was consistently ignored by government. These residents perceived public meetings as condescending and meaningless as their value is diluted by the universalistic ideals of science as chief over experiential or traditional environmental knowledge (TEK) and wisdom. However, a great deal of pride exists within localized expert knowledge, and communities are not likely to comply with sweeping restorative/mitigative government regulations unless that knowledge is recognized in the policy planning process. One man expressed his distrust of scientists and engineers in his interview:

"I see it [land loss] and I see it now. The more they do, the more it eats away. But the engineers, they're too smart. They went to too many colleges and never came and looked at it. It's not on the book. No, come and see the climate itself. Come do it. Like, not what you read out of a book. But I guess they get paid not to spend too much money…. But they've never been to Grand Isle, and they're going to tell me how to protect Grand Isle" (Alfonse, retired police officer, Grand Isle, LA).

This sentiment of holding insider knowledge about the land derives from a strong attachment to place, creating an aversion to outsiders such as scientists and government officials who fail to consider this type of knowledge. Burley et al (2007) write that residents' knowledge of place is a valuable component that is not only useful but necessary for successful restoration (or managed retreat). Involving residents and making an effort to understand how they relate to places can both enrich the value of restorative/managed retreat efforts and alleviate potential conflict throughout their implementation. Thus, the entire restorative process is jeopardized if public engagement is not undertaken in a meaningful manner.

Globalizing managed retreat

Climate Change 2007, the Fourth Assessment Report (AR4) of the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), is the latest in a series of global reports which are increasingly focusing politician, planner, and policy maker attention on the multiple scales and challenges of mitigation and adaptation to climate change. In the AR4 *Synthesis Report: Summary for Policymakers*, is table SPM.4 that

Table 1. Table SPM4—selected examples of planned adaptation by sector (IPCC, 2007).

Sector	Adaptation option/strategy	Underlying policy framework	Key constraints and opportunities to implementation (normal font = constraints, italics = opportunities)
Infrastructure/ settlement (including coastal zones)	Relocation; seawalls and storm surge barriers; land acquisition and creation of marshlands/wetlands as buffer against sea level rise and flooding; protection of existing natural barriers.	Standards and regulations that integrate climate change considerations into design; land use policies; building codes; insurance.	Financial and technological barriers; availability of relocation space; *integrated policies and management; synergies with sustainable development goals.*

shows "selected examples of planned adaptation by sector". In table 1 we illustrate one sector of the table, namely 'infrastructure and settlement' (including coastal zones).

The table shows that, in terms of infrastructure and settlements, the adaptation option/strategy is relocation (managed retreat); yet humans are not mentioned. While the concept of managed retreat was developed primarily to protect vulnerable ecosystems, we believe that there is a problematic neglect of the psychological, symbolic, and particularly emotional aspects of healthy human habitats. This seems strange when the key opportunity is identified as *integrated policies and managements; synergies with sustainable development goals.* Integrated policies and managements should consider these critical human aspects alongside the physical aspects of infrastructure and settlement.

Localizing managed retreat
Many coastal communities in Northern Alaska are already beginning managed retreat programs as melting permafrost beneath shorelines invite surging tides to dislodge entire sea cliffs and waves to erode disappearing beaches. Shishmaref, a traditional Inupiaq Eskimo village on the Chukchi Sea with 400 years of settlement has recently approved a plan to relocate its 650-person village about 18 miles inland over the course of the next 2–5 years. Despite the severe disruption of such a move to a community whose livelihood is based almost entirely on the sea, residents are not opposed to the plan and have yet to pose conflict towards local officials about its adoption. Perhaps this is because all 650 villagers were involved in discussions with politicians and scientists about how to best manage the impending threat of the rising tide and were given the opportunity to democratically approve the managed retreat plan by 2/3 majority vote. This fits the arguments of Burley et al that residents' knowledge of place is a valuable component that is not only useful but necessary for successful managed retreat.

Summary: toward interventions
The literature on the psychology of place suggests that disruptions caused by burglary, conflict, or environmental change can lead to feelings of grief, loss, and anxiety, and disrupt the networks of social support which are of particular value to low-income communities (Brown and Perkins, 1992; Fried, 2000). In extreme cases, this can lead to problems of nostalgia, disorientation, and alienation or what Fullilove (1996) calls 'rootshock'. We think the effects and consequences of current and predicted future climatic change(s), without massive joined-up resource mobilization and intervention

strategies, will increasingly be these negative emotional and symbolic outcomes which will compound the more conventionally highlighted economic outcomes. There is a significant risk that policy interventions to prevent negative human responses to climate change will exacerbate the problem by failing to adopt an integrated approach to managed retreat, including socio-emotional aspects, and by adequately engaging with affected communities.

This supports the need for psychologists, anthropologists, policy makers, and planners to work together with the affected communities, to intervene in anticipation of such changes. Moreover, as Adger et al (2006), Agyeman et al (2007a; 2007b), and others have shown those low-income/minority and other climate-vulnerable populations least able to bear the burden and with least responsibility for its creation, will indeed bear the brunt. While these authors did not focus directly on the psychological, symbolic, or emotional aspects of low-income/minority and other climate-vulnerable populations, we argue that their lack of resilience will compound negative emotional and symbolic outcomes. Yet such interventions are fraught with difficulty, both at the psychological and planning levels, and pose challenges to the capacity of public institutions to manage and communicate what might be unpopular forms of change. Here we discuss several of these challenges.

It is possible to think of managed retreat as a form of change intervention that can be characterized in terms of basic process and outcome dimensions (Walker and Devine-Wright, 2008). In terms of public acceptance, managed retreat interventions are more likely to be accepted if they are interpreted by those involved in it as a *process* that is fair, transparent, and inclusive (procedural justice) or that leads to positive and fair *outcomes* for the individuals and groups involved. Judgments of fairness are likely to be significant—will the process of retreat be perceived to be sufficiently fair, inclusive, and transparent so as to ensure that negative and positive outcomes are shared in a just and equal manner, without favouritism for particular individuals or social groups? Issues of injustice are already inherent to most managed retreat and coastal restoration programs in that the human communities most affected are not responsible for the land loss (Burley et al, 2007)

The psychological aspect of place is relevant since communities are more likely to take action within a managed retreat process if there is a prevalent attachment to place, a perception of the place as being under threat, and an understanding that fellow community members are willing to engage (Burley et al, 2007). However, the psychology literature has relatively little to say about a process that could be described as 'place detachment', whereby individuals and groups anticipate and negotiate the negative future consequences of remaining in a place by intentionally loosening existing attachments and forming new ones elsewhere. It is this process of place detachment that we consider significant for managed retreat. Research on the cognitive, emotional, and behavioural dimensions of voluntary relocation suggests that "people work at creating stability within the change and prepare both for leaving and for beginning new individual and communal aspects of identity" (Brown and Perkins, 1992, page 287). However, given the likely prevalence of climate-induced environmental changes over the coming decades, further research is required to better understand the process of detachment and how policy interventions can foster detachment without inducing resistance to change.

The efficacy of institutional policies to promote detachment is likely to hinge on the kinds of engagement practices employed: for example, involving residents early on in the planning process in ways that are meaningful and that value their unique knowledge of the land. Secondly, an important factor will be the degree of trust associated with such institutions by different individuals and groups in a

specific place. The capacity of institutions to identify and implement culturally sensitive risk-communication tools (Agyeman et al 2007a; 2007b; Vaughan, 1995) will be important as will past histories of tension or conflict within a community. As we learn from Burley et al (2007), widespread distrust and resentment towards local government and scientists can manifest where communities feel alienated from the program/policy planning process.

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