Research Paper

Place-based climate change adaptation: A critical case study of climate change messaging and collective action in Churchill, Manitoba

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HIGHLIGHTS

- Climate change risks are perceived along ecocentric and anthropocentric dimensions.
- Nature relatedness can be a platform for developing rapid place connections.
- Citizens' sensitivity to climate impacts is tied to a social connection to place.
- Salient messages are spatially and temporally congruent but also have a 'social fit'.
- Messages that are socially salient can better motive collective climate action.

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ABSTRACT

Climate change adaptation frameworks often emphasize tangible community vulnerabilities, but typically fail to recognize that healthy, vibrant, and resilient communities are also based on many factors that are experiential in nature. In response to the continued undervaluation of such factors, scholars are adopting place identity and place attachment as a way to explore the risks of climate change in a more holistic manner. This study draws on Churchill, Manitoba's unique relationship with climate change to present an early examination of place-based climate change adaptation. Results from a community survey suggest that citizens' sensitivity to local climate impacts is associated most strongly with their connection to the social meanings that are embedded in the natural landscape.

Results also indicate that this place driven sensitivity does not necessarily lead to an increase in actions to adapt to climate change. It is suggested that inaction in the face of climate change can persist, even when citizens' have a strong connection to place, particularly because dominant climate change communications fail to produce a socially salient message. By linking place-based adaptation research to an emerging value-based frame for climate adaptation, this study presents new pathways to help legitimize local values in climate change adaptation processes, and to create frames for communication that are more conducive to fostering collective action.

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1. Introduction

The Intergovernmental Panel on Climate Change's fifth working group II report demonstrates a pressing need to adapt to climate impacts that society is already experiencing (IPCC, 2014). In a North American context, it also reinforces the recognition that local governments have taken a leading role in climate adaptation planning, largely in response to unprecedented threats to human wellbeing (e.g. Hurricane Sandy in New York, U.S.A), pressure from local citizen stakeholders, and a perceived lack of upper-tier government action (Burch, 2010; Fresque-Baxter & Armitage, 2012; Leduc, 2007). Interestingly, the local adaptation response itself also reflects a recent theoretical shift in climate adaptation thinking (Smit & Wandel, 2006). First-wave adaptation emphasized national scale issues and conceived of adaptations through a macro-economic policy lens. This approach used adaptation policy primarily to help determine how far critical systems could bend before breaking; making adaptation a tool to define a minimum threshold for mitigation investment (Dessai & Hulme, 2004; Schipper, 2006).

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In contrast, drawing on scholars like Sen (1982) and Hewitt (1998), second-wave thinking has reorganized around the concept of vulnerability to emphasize ways that local, historically contingent factors constrain adaptive capacity. Accordingly, community risks due to events like flooding are understood as a function of long-standing planning practices (e.g. allowing development in floodplains), not just the properties of a particular hazard. Likewise, citizens are not viewed as passive recipients of hazards, but as agents who have the ability to shape their relationship to various risks. This form of thinking is highly reflective of Pred's (1984) efforts to explain how human action and experience shape, and are shaped by the landscape through a process of mutual exchange. Most importantly, it also emphasizes human agency as a means to protect ecological and social systems, not because it is economically rational, but because these systems have value in their own right (Eakin & Luers, 2006; Smit & Wandel, 2006).

Subsequent to this shift, a critical body of work has examined the local climate risks and tangible vulnerabilities facing communities (Burton, Huq, Lim, Pilifosova, & Schipper, 2002; Eakin & Patt, 2011). Yet as O'Brien (2009) argues, second-wave studies have done comparatively little to identify the intangible norms, attitudes, and values that shape vulnerability in more nuanced ways. Community climate adaptation research often overlooks psychological studies, which indicate that a lack of issue salience can contribute to complacent attitudes about climate change and thus suppress knowledge mobilization within citizen networks (Marx et al., 2007; Pidgeon, 2012). Findings also demonstrate that when media communications frame climate impacts as spatially and temporally remote, or appeal to fear-based messages, they can dampen public concern or produce a disempowering sense of fatalism (Lorenzoni & Pidgeon, 2006; Scannell & Gifford, 2011). Accordingly, while second-wave adaptation thinking engages society's tangible vulnerabilities, a holistic approach goes further by examining the local socio-psychological factors shaping adaptive capacity (Adger, 2003; O'Brien, 2009).

Of interest here is a body of evidence linking community vulnerability, citizen perceptions of climate change, and community connections to valued places. Scannell and Gifford (2011), for example, recently compared global and local climate change messaging and found that place-based messages are more meaningful to the public. At the same time, place is more than just a way to frame communications. In the context of climate adaptation planning, locally valued places are a point of commonality for diverse stakeholders who posses otherwise differing worldviews. Place can therefore be a common language for understanding the realities of local climate adaptation, as well as a vehicle to help acknowledge that climate change threatens established cultural traditions and identities (Adger, Barnett, Chapin, & Ellemor, 2011).

The emerging nexus of psychology, place, and climate action is promising from a research and policy standpoint. Little is known about its practical relevance however, because studies to date have emphasized experimental designs that do not fully reflect the realities of daily life that shape place bonding. Moreover, even when research is carried out as a community case study, local conditions tend not to reflect dominant climate change discourses (e.g. media depictions of melting glaciers or threatened polar bears). There is thus a significant need to expand the knowledge of place-based climate adaptation by examining a case study where the lived experience of climate change provides a closer fit with scientific and mainstream media climate discourses.

To capitalize on this opportunity we selected Churchill, Manitoba as a 'critical case study' (Yin, 2003). Churchill is the polar bear capital of the world, and has an economy that is supported by thousands of tourists who visit during polar bear viewing season (Dawson, Stewart, Lemelin, & Scott, 2010). Due to a diminishing ice pack, Churchill's polar bears and tourism economy are also viewed as the frontline of climate change within the mainstream media and scientific discourse (Regehr, Lunn, Amstrup, & Stirling, 2007; Roach, 2007). This northern community therefore offers a rare chance to explore the impact of dominant climate change communications on local perceptions, and to more fully understand the socio-psychological roots of community vulnerability and action (Adger et al., 2011). These goals are accomplished by examining two related research questions:

(1) How are citizens' place attachments and place identity linked to their perceptions of local climate change?

(2) Does this link have any implications for framing effective messaging and dialogue as it relates to climate change adaptation and collective action?

2. Literature review

2.1. Linking vulnerability to values in adaptation thinking

The link between adaptive capacity and the experiential nature of citizens' perception of climate change is receiving increasing attention. By reorganizing the vulnerability discourse around values, for instance, O'Brien and Wolf (2010) challenged conceptions of authority and priority setting in the climate adaptation process. As O'Brien (2009) notes, second-wave adaptation thinking tends to ignore local attitudes and values. In contrast "a values-based approach to vulnerability and adaptation directs attention toward what matters to groups or societies" (O'Brien & Wolf, 2010, p. 7). This distinction offers a critique of the continued expert dominance of the adaptation discourse. It also underscores two gaps in dominant adaptation thinking that may be fostering an emerging third-wave approach to climate adaptation. First, it demonstrates how local attitudes, values, and cultural traditions can condition perceptions of what is at risk, and thus how these factors can contribute to vulnerability. Second, it suggests that these experiential factors should also be folded back into a more inclusive process for identifying a community's adaptive pathway (Wolf, Allice, & Bell, 2012).

By embracing the experiential nature of community life, values-based adaptation appeals to a more deliberative model of planning. It is thus more consistent with the nature of local culture and identity than expert driven approaches (Adger et al., 2011). Still, there are notable challenges to implementing a deliberative approach to climate adaptation, particularly the task of facilitating dialogue around abstract values (e.g., tradition, freedom, unity) (O'Brien & Wolf, 2010). Accordingly, because many community values are embedded in the local landscape (Basso, 1996), the concept of place may be an important heuristic for examining local values in a climate changed world. In particular, a place focus offers a common language that is familiar to, and shared by, landscape professionals and citizens. Capitalizing on this language, however, requires a clearer understanding of how place is defined and measured in relation to climate change.

2.2. Understanding place in a climate changed world

The current conceptualization of place was introduced by human geographers like Relph (1976) and Tuan (1974) as the meaning that people ascribe to spaces through their lived experience. In a climate change context, place is therefore often presented as a means to examine how the public perceives local climate risks and impacts in the course of their daily lives (Fresque-Baxter & Armitage, 2012). In communities with strong connections to the land, place attachments can be a rallying point to resist demographic trends (e.g. population decline) that can reduce resilience to climate change (Amundsen, 2013). Place attachments can also help