



# Incorporating emotional geography into climate change research: A case study in Londonderry, Vermont, USA



Kathryn Ryan

Department of Geography, Rutgers University, Lucy Stone Hall, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854-8045, United States

## ARTICLE INFO

### Article history:

Received 30 October 2015

Received in revised form

15 February 2016

Accepted 25 February 2016

### Keywords:

Climate change

Emotion

Interconnectedness

Participation

Community

Hope

Social transformation

## ABSTRACT

The influence of emotional knowledge upon the ways people experience and understand climate change is increasingly recognized within geographic scholarship; however, limited research considers the potential of emotion to prompt adaptation. Drawing upon literature of emotional geography, social dimensions of climate change, and public participation, this study illustrates the role of emotion in a public participation exercise in Londonderry, Vermont – a small town struggling to recover from Tropical Storm Irene. As a member of an interdisciplinary design team that facilitated a workshop on flood resilience and adaptive design in Londonderry, I witnessed an innovative exercise that employed storytelling, emotion, and body movement. This activity, which I term ‘emotive–physical storytelling’, created a foundation of trust and interpersonal connection that facilitators and residents built upon to plan for flood resiliency. Contrary to recent accounts of the ways that negative emotional responses can cause inaction in the face of climate change, this paper argues that creative public participation methods can generate positive emotions such as hope, responsibility, care, and solidarity. Such emotions have the potential to inspire adaptive action and produce transformative change.

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## 1. Introduction

Discussions of global atmospheric conditions, international treaties, and technical models tend to dominate climate change narratives, largely obscuring how the phenomenon is entangled with the emotional fabric of people’s lives (Barnes and Dove, 2015). Geography, however, is well placed to incorporate emotion into climate change research. Over the last decade, there has been an upsurge of interest in emotion within geography, evidenced by a growing number of publications and conference sessions (Olson, 2015; Smith et al., 2009; Thien, 2005). The turn towards emotion reflects the influence of feminism, poststructuralism, and psychotherapy, as well as renewed engagement with phenomenology (Woodyer and Geoghegan, 2012). Thus, the ‘emotional turn’ represents a desire to illuminate the ways that emotion is, and has always been, integral to geography. This presents an opportunity to apply a geographic understanding of emotional knowledge to climate change research.

Using a case study of an interdisciplinary climate change planning workshop held in Londonderry, Vermont, USA, this paper

demonstrates how attending to emotion within public participation can lend a new perspective to climate change adaptation. Like many small New England towns, Londonderry has struggled to recover from devastating flooding brought about by Tropical Storm Irene in August 2011. Unprecedented flooding and extreme rainfall events have generated ample attention to climate change in the Northeast, leading to numerous efforts to foster adaptive responses to socioecological change (Medalie and Olson, 2013). The Londonderry workshop was one such effort.

As a member of the workshop, I observed an innovative participatory exercise that employed storytelling, emotion, and body movement. This activity, which I term ‘emotive–physical storytelling’ (EPS), created a foundation of trust and interpersonal connection that Londonderry residents and workshop facilitators built upon to plan for flood resiliency. More significantly, the experience generated feelings of surprise, delight, and possibility that spawned a moment of “transformative social learning” (Forester, 1999: 134). This moment carried through the workshop, enabling the community to create new knowledge about climate change and recognize adaptation as an opportunity to produce socioecological transformation in Londonderry.

The open-ended, hopeful design of the workshop starkly contrasts to the ‘motivation by fear’ (Moser and Dilling, 2011) and

E-mail address: [kathryn.ryan@rutgers.edu](mailto:kathryn.ryan@rutgers.edu).

'crisis approach' (Amsler, 2010) strategies often taken by climate change communication. Such a positive stance, reminiscent of Woodyer and Geoghegan's notion of enchantment (2012), emphasizes the power of positive emotions such as hope, care, and wonder – emotions that are often overlooked in accounts of climate change that emphasize negative emotions (Graybill, 2012; Norgaard, 2011). Following Woodyer and Geoghegan (2012), this paper uses the Londonderry workshop to suggest that geographic and planning research need to be receptive to moments of positive emotional connection to foster climate change adaptation.

## 2. Literature review

People experience life through emotions and within environments, meaning that experience, emotion, and environments are mutually constitutive (Graybill, 2012). Human geography made this relationship explicit, arguing that "[e]motion tints all experience" and experience is the way "through which a person knows and constructs reality" (Tuan, 1977: 8). Our emotions influence our perceptions of daily life, and enable us to give meaning to the world in which we live (Harding and Pribram, 2009; Smith et al., 2009). Emotional connections in place are further heightened when people rely on their natural surroundings for socioeconomic survival (Brugger et al., 2013; Graybill, 2013). This is the case in rural Vermont, where livelihoods are often reliant on ecosystem services such as tourism, recreation, and agriculture.

To place the emotions that emerged within the Londonderry workshop into a conceptual frame, I adopt a working definition of emotional knowledge as articulated by Bennett (2004), Bondi (2014), and Olson (2015). I view emotional knowledge through a feminist lens where emotion is relationally constituted between and among people and environments, recognizing the material-discursive forces that circumscribe and generate the emotions people experience and express. Emotion does not operate in opposition to reason but is central to how people process, interpret, and make sense of their world (Massey and Thrift, 2003). Emotions are highly personalized and contingent upon culture, history, psychology, biology, material conditions, and countless other factors (Smith et al., 2009). Additionally, emotion is performative and embodied, produced within and between relational bodies, triggered by external events yet experienced both psychologically and physiologically (Barbour and Hitchmough, 2013; Pratt, 2012). Within this theoretical frame, I consider emotions generated within the emotive-physical storytelling exercise as relationally produced by residents and workshop facilitators. Emotions were mediated through body movement, influenced by prior experiences, and shaded by infinite social, cultural, political, environmental, economic, and other material-discursive factors.

### 2.1. Emotion and climate change

Across the literature of disciplines such as public health (Myers et al., 2012), science communication (O'Neill and Nicholson-Cole, 2009), and visual arts (Duxbury, 2010), research explores the relationship between emotion and climate change. However, this literature does not adopt a relational understanding of emotion as described above but implicitly upholds the binary between reason and emotion, where emotion is little more than a biological response to outside stimuli. Conversely, much work in geography considers emotion as a relational force, a framing that offers a more nuanced understanding of how people experience, perceive, and engage with climate change (Olson, 2015).

Even with geography's deep theoretical engagement with emotion, geographic climate change research nevertheless tends focus largely on technical, scientific, and 'objective' understandings

of climate change dynamics (Brace and Geoghegan, 2010: 294; O'Brien and Selboe, 2015). When geographic climate change literature does address emotion, it often comes in one of two forms: as an effect of climate change or as a barrier to rational action. The first group treats emotion as a way that people experience climate change. This literature recognizes the relationship between environment, experience, and emotion (compare Bingley, 2003; Graybill, 2012; Manzo and Perkins, 2006), and explores how individuals emotionally respond to climate change impacts such as natural disasters (Moser, 2014: 345) or changing landscapes (Leyshon and Geoghegan, 2012; Tschakert et al., 2013). For instance, Albrecht et al. (2007: 95) offer the concept of solastalgia to describe "the distress that is produced by environmental change impacting on people while they are directly connected to their home environment." The second group focuses on emotion as a significant barrier to adaptation, arguing that emotion produces irrationality or cognitive dissonance (Graybill, 2012). Such literature also explores how emotions, values, and beliefs interact to produce climate change denial (Norgaard, 2011).

Recently, geographers have contributed to an emerging third strand of climate change literature by attending to the transformational potential of emotion. Diverging from previous scholarship that focused on the power of negative emotions to motivate community action (Henderson, 2008; Jasper, 1998), this newer work heeds increasing evidence that fear, anger, and guilt are unable to produce engagement in climate change efforts (Bain et al., 2012; Moser and Dilling, 2011; Moser, 2007) and instead looks to positive emotions and values such as hope, excitement, and responsibility. Such research echoes arguments that positive emotional attachment to place can stimulate political engagement (Brown and Pickerill, 2009; Olson, 2015; Woods et al., 2012), as well as sentiments expressed by Gibson-Graham (e.g. 2006) regarding the political potential of positive emotions (c.f. Sedgwick, 2003). Cameron (2007) applies Gibson-Graham's ideas climate change, explaining that a recognition of the potential of local initiatives to produce meaningful change can generate efficacious feelings of hope and possibility. Woodyer and Geoghegan (2012) similarly call for geographers to open themselves to enchantment within the everyday: moments when we are surprised, delighted, and jerked out of our habitual ways of being through encounters with the world. Orienting ourselves towards these emotional experiences, Woodyer and Geoghegan argue, can reenergize political action and make visible the possibilities that already exist around us (c.f. Buck, 2014).

Tschakert and St. Clair's (2013) conceptualization of radical transformation offers a powerful call for emotion to prompt climate-related action. Radical transformation requires an understanding of the world that is fundamentally shaped by interdependencies between people and places across time and space. Tschakert and St. Clair argue that such interconnectedness reimagines responsibility as a relational entity underpinned by care and solidarity. Ultimately, emotional attachments and recognition of shared vulnerability foster a sense of intrinsic connection to others, such that personal identity is expanded to include responsibility for those outside immediate spatial and temporal horizons (compare Brown and Pickerill, 2009; Neimanis and Walker, 2014; Whittle et al., 2012). Fostering emotional and embodied feelings of responsibility and care is an ongoing relational process that may trigger shifts in values – a process critical for prompting socioecological transformation.

While these examples demonstrate the growing concern for emotion within climate change research, this literature rarely offers practical means to integrate emotion into adaptation planning. Similarly, more applied and practical considerations of adaptation often uphold a scientific discourse at the expense of emotion (see

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