Social scientists have long occupied themselves with how and why people change attitudes, beliefs, and behaviors over the life course, often focusing on the dialectics of change and stasis, of and emergence and complacency. As climate change intensifies, the focus of this attention is understandably shifting to environmental attitudes and practices. Although it is tempting to assume that attitudes and practices are ossified, changing only gradually over long periods of time, is this the case? In this context, scholars are increasingly wondering whether and how experiencing shocks and traumas, such as environmental disasters, firsthand might catalyze these changes and encourage people take the climate crisis more seriously.

Researchers are clear that the Earth’s climate is changing, that human activity is primarily responsible for this change, and that we are entering a period of sustained climate crisis (Klinenberg, Araos, and Koslov 2020). Despite a scientific consensus on these matters, experts have been stymied in attempting to get the public to act to decrease their carbon emissions. At the same time, scientists (IPCC 2015), government agencies (UNDRR 2019), and private insurers (Rudolph 2019; Weymann and Egloff 2019) agree that this climate crisis is already bringing with it more disasters and catastrophes. Given this context, it is important to ask how the landscape of increasing disaster risk maps onto widespread public complacency and reluctance, particularly among wealthy residents of the Global North.

It is at this juncture that the current article is situated. The main research question asked herein is: How does experiencing a disaster make residents think differently about environmental issues including climate change, disaster risk, energy, food, and water? I also ask how this new knowledge informs their environmental praxis, or the actions they take to address environmental problems. Does a jarring event, such as a flood, rupture environmental complacency in a place dependent on fossil fuels and catalyze proenvironmental behaviors (PEBs)?

Using qualitative data gleaned from in-depth interviews of Calgary residents affected by the 2013 southern Alberta flood, I present an experiential and social-psychological process of attitudinal and behavioral change, allowing us to better understand how jarring environmental events disrupt complacency.

Abstract
As climate change intensifies, scholars are beginning to ask whether firsthand experience with disaster will cause complacent people to develop greater environmental concern and engage in more proenvironmental behaviors. Will the disruption caused by experiencing a local environmental disaster be enough to motivate residents to change their values and behaviors? The aim of this study is to answer that question by analyzing qualitative interview data collected from 40 residents of Calgary, Alberta, who survived the devastating and costly 2013 southern Alberta flood. Despite normally high levels of climate change denial and complacency, findings indicate that the flood prompted residents to concern themselves more with climate change and the climate crisis and to begin adopting many household-level proenvironmental behaviors. The findings also point to important gender differences in both environmental concern and proenvironmental behaviors. Thus, the article establishes a social-psychological process of attitudinal and behavioral change, allowing us to better understand how jarring environmental events disrupt complacency.

Keywords
climate change, disaster, complacency, environmental concern, proenvironmental behavior, oil and gas
analysis of this attitudinal change. For flood-affected participants, the evacuation order, rising water, and destroyed buildings shocked them and disrupted their feelings of environmental complacency. How did these shocked and displaced residents begin to think differently about the importance of the environment and the pressing need for environmental change? Then, I outline how participants began to think differently and prioritize environmental preservation and restoration. How did environmental concern emerge from disaster experience? Finally, I address how many of the residents adopted PEBs—driving less, recycling, and so on—which they view as unlikely to have happened without going through a disaster.

**Review of Literature and Theory**

**Complacency and Inaction**

Environmental sociologists have long pointed out that if people do not go out of their way to protect the environment, the default North American and Western lifestyle results in environmental harm (Bell and Carolan 2004). Arising from that contentious argument, environmental sociologists spend considerable effort understanding what motivates people to remain complacent or to fail to address environmental problems.

Recent work reveals how people educated about climate change still often do nothing to address it. As Norgaard (2011) found, people in high-emitting countries are usually very aware of climate change and believe that it is caused by human activity; there is little knowledge deficit. Rather, her participants experienced deeply felt emotions while discussing climate change: guilt, helplessness, and fear. These emotions prompted them to use particular discursive strategies when asked directly about climate change; changing the subject, shifting blame, and constructing narratives about their own countries as being environmentally friendly, even when those narratives ran counter to actual emissions data. Thus, these emotionally protective mechanisms serve to foster inaction. In a study of Canadian men, Milnes and Haney (2017) found that it was men’s economic dependence on the oil and gas industry that prompted many men to deny the scientific consensus on climate change, to blame others for the problem, or in some cases to say that climate change will ultimately be a positive development for normally cold Canada. This reluctance and complacency, they argued, is related to patriarchal culture, which expects men both to compete with one another (producing “winners and losers”) and to earn as much as they possibly can.

Research from environmental psychology and the decision sciences looks closely at the different ways people discount or ignore environmental risks. These include the tendency toward optimistic bias: believing that one will probably emerge from a disaster unscathed, even when most do not (Meyer and Kunreuther 2017; Trumbo et al. 2014), as well the tendency to miscalculate both disaster likelihood frequency (Highfield, Norman, and Brody 2013) and potential severity (Clarke 2006), which leads to flawed notions of risk awareness (Hopkins and Warburton 2015) and a failure to take up important risk mitigation measures (Bubeck, Botzen, and Aerts 2012; Thistlethwaite et al. 2018). These cognitive biases explain complacency and inaction, and that “lack of information or concern is rarely the underlying cause that connects behavior to [environmental] harm (DeSombre 2018:3; see also Norgaard 2011).

As residents live their everyday lives and navigate the world, they work to diminish the impact of unpleasant information (such as the scientific consensus on climate change), instead exhibiting a blind optimism, or what Cerulo (2006) called “positive asymmetry.” Other social science research demonstrates how certain topics, though widely understood, are never discussed or mentioned because of the negative emotions they evoke: the metaphorical “elephant in the room” (Zerubavel 2006). In sum, though residents of wealthy cities in the Global North are generally fully aware of climate change and their attendant risks, they engage in psychological work to avoid thinking about these topics and incorporating them into their everyday lives.

Extant theory also helps us understand why residents cling to entrenched policies and institutional practices, even those that ultimately contributed to disaster risk. This tendency is usually understood in two ways. First, residents worry that the disaster may threaten particular industries (e.g., oil and gas) and may therefore rally around them to protect them (Bishop 2014). Second, according to system justification theory, “people are motivated to accept and perpetuate features of existing social arrangements, even if these features were arrived at accidentally, arbitrarily, or unjustly . . . . The theory posits that people support, defend, and bolster the status quo simply because it exists” (Napier et al. 2006:59–60). In indigenous communities, Brulle and Norgaard (2019) showed how efforts to maintain social order and, therefore, to avoid the very real risk for cultural trauma that comes with rapid change, also create social inertia and prevent concrete actions for dealing with climate change. In short, we see how necessary changes often run up against the inertia of “normalcy.”

Complacency is particularly strong in fossil fuel–extracting communities of the West, where forces defending fossil fuel capitalism provide sources of “antireflexivity,” preventing critical self-evaluation (Givens et al. 2020). Bell (2016) demonstrated the mechanisms by which residents of coal-mining Appalachian towns fail to resist harmful industry practices. Dubbing this a failure to “micromobilize,” Bell argued that both economic dependence on coal mining jobs and the industry’s efforts to shape the culture of local communities contribute to a widespread unwillingness to speak or act out against coal. In this fossil fuel–producing bioregion, coal companies use “subtle, continuous acts of obstruction, non-cooperation, and dissimulation [which prompt] activists to withdraw from protest” (Lewin 2019).
A significant body of research also sensitizes us to how particular environmental subjectivities emerge and how particular positionalities (e.g., as white, wealthy, and/or residents of the Global North) shape environmental views and practices in particular ways. As an example, McCright and Dunlap (2011) demonstrated that politically conservative white American men are the group most likely to endorse anti-science, denialist views of climate change. This “white male effect” has been examined in numerous studies in environmental sociology and the sociology of disaster (e.g., Marshall 2004; McCright and Dunlap 2013; Mueller and Mullenbach 2018). Ford and Norgaard (2020) demonstrated that people operate within location- and position-specific environmental subjectivities, which are “the lived experience of environmental knowledge as shaped by power, ideology and agency” (p. 45). Their analysis sensitizes us to how privilege and status within interlocking systems of power “produce an environmental subjectivity [for certain people] that is ambivalent about challenging the project of modernity, even as it produces intolerable levels of risk.” However, much research in environmental sociology, they argued, assumes a universal subject and does not account for differences in the structural location of various communities and subpopulations. Given that, they argued for an approach that takes into account the situated knowledges that follow the contours of the various axes of difference and inequality: race, class, gender, indigeneity, and so forth. These location-specific subjectivities help us understand how and why environmental concern may be low within wealthy, white, fossil fuel–dependent communities of the Global North—like Calgary.

Most of the aforementioned work gauges people’s environmental views and behaviors during “normal” times, often asking them to think about future risks and how people manage their emotions and justify inaction when faced with a prospective threat. In the current article I instead look at how the actual experience of an emotionally stressful event may spur action. In doing so, I add to this body of work by offering an analysis of whether recently experienced disruptive, catastrophic events can jar attitudinal stasis and complacency. When residents in an oil-producing region (Alberta), who embody wealth and privilege, are affected by a catastrophic flood, how and why are their environmental views and practices affected? Accordingly, disasters might rupture residents’ complacency, expose contradictions between the region’s oil production and increasing disaster risk, and otherwise prompt residents to think and act in more sustainable ways. In what follows, I outline this social-psychological process and discuss some of the ways research has found that disaster-affected people alter their environmental attitudes and behaviors.

**Shock, Disruption, and the Lived Experience of Disaster**

Dating back to the 1970s (Erikson 1976), but accelerating after the 1989 Exxon Valdez oil spill (Gill 2007; Gill and Picou 1998; Gill, Picou, and Ritchie 2012; Picou, Marshall, and Gill 2004; Whaley 2009), sociologists have taught us much about how disasters cause chronic community trauma. Understandably, most of this work focuses on disruption as a negative externality of disaster, drawing our attention to how to best get people back into their surroundings and routines, a state deemed a “new normal” (Gotham, Blum, and Campanella 2014; Hidalgo and Barber 2007; Kelly et al. 2010; Silver and Grek-Martin 2015). But disaster experiences can also liberate people from entrenched ways of doing things. At a more macro level, we know that disasters can serve as a catalyst for sweeping policy changes, both progressive (Birkland 2006) and regressive (Fu 2016; Gotham and Greenberg 2014; Klein 2007).

Part of the reason for this disruption is that disasters bring larger, global processes such as climate change into greater focus and into local concern. One way this likely happens is through the rupturing of affected residents’ surroundings and patterns of daily life. Disasters are inherently traumatic events, and existing evidence points to their ability to rupture people’s sense of normalcy, routines, and familiar surroundings. Dubbed their “ontological security,” this sense of familiarity and stability allows people to conduct their daily lives with a sense of autopilot (Dupuis and Thorns 1998; Giddens 1991; Harries 2008; Hiscock et al. 2001; Kearns et al. 2000; Kent 2016).

Recent research indicates that disasters are important events for rupturing people’s ontological security, as well as their silence, denial, and complacency. Following Hurricane Katrina, Hawkins and Maurer (2011) demonstrated how residents of New Orleans’ Lower 9th Ward experienced these feelings of disruption and sought a return to normal. Along similar lines, Haney and Gray-Scholz (2020) found that many flood-affected residents reported a disruption to their familiar routines and landmarks and, importantly, that this disruption was much more common for women than for men. Other research also demonstrates the profound disruption of residents’ ontological security after disaster (Akerkar and Fordham 2017; Gorman-Murray, McKinnon, and Dominey-Howes 2014; Reid and Beilin 2015; Sousa, Kemp, and El-Zuhairi 2014; Zaretsky 2002).

Is there any existing evidence that the lived experience of disaster can trigger changes in environmental views? On the basis of U.K. survey data, those who report experience of flooding express more concern over climate change, see it as less uncertain and feel more confident that their actions will have an effect on climate change. . . . These perceptual differences also translate into a greater willingness to save energy. (Spence et al. 2011:46)

The key mediating factor here is instrumentality (feeling that one has the ability to have an effect), which other scholars have dubbed “efficacy.” Experiencing a disaster firsthand also brings climate change into local and temporal focus. As DeSombre (2018) reminded us,
if I do not experience the negative effects of an action, and especially if I am not even aware of them, I will be unlikely to consider them when deciding whether to take action. But where and when those externalities are experienced can increase the likelihood that I will be unconcerned about them. (p. 21)

Logically, firsthand, local experience should then be more likely to trigger both environmental concern and PEBs. Missing from existing research, however, is an analysis of just how disaster-affected residents experience these sorts of perceptual changes.

**Environmental Concern, in and outside of Disaster**

Who expresses concern for the environment and for our changing climate? During normal, nondisaster times, many variables of social scientific interest are predictive of greater environmental concern, including age, political orientation, education, income, geography (Brody et al. 2008; Hamilton 2011; Hamilton et al. 2015), race and ethnicity (Seyfang and Paavola 2008; Whitmarsh and O’Neill 2010), gender (Andrew, Buchanan, and Haney forthcoming; Cutler 2016; Gifford and Nilsson 2014; McCright and Xiao 2014; Sundström and McCright 2014), as well as childhood experiences, education, personality characteristics, self-efficacy, values, worldviews, place attachment, and many more social-psychological characteristics (Dietz, Kalof, and Stern 2002; Gifford and Nilsson 2014; Kalof et al. 2016). Income, in particular, has been shown to be a particularly consistent and robust predictor, with greater economic vulnerability generally being related to greater environmental concern (Cutler 2016; Franzen and Meyer 2010; Mayer and Smith 2017). As the wealthy residents of the Global North are disproportionately responsible for the climate crisis (Harlan, Pellow, and Roberts 2015), it is especially noteworthy that research focuses on what may trigger this group to feel and voice greater concern.

In the postdisaster context, research reveals that a number of factors are predictive of environmentalism. Work by Hamilton, Safford, and Ulrich (2012) demonstrates that after the Deepwater Horizon oil spill, those who live in places dependent on tourism (Florida) were more likely to voice proenvironmental views than those in places dependent on oil and gas extraction (Louisiana). In short, source of income exerted an effect on postdisaster environmental views, allowing some to adopt more progressive views and others not. In Alberta, Haney and McDonald-Harker (2017) showed how experiencing the 2013 southern Alberta flood prompted residents of a small rural community to question humans’ relationships with nature, understand how human decisions create disaster risk, and see their community as more connected to global environmental changes. The flood also sparked a newly impassioned environmentalism in children and youth in a small, heavily flooded Alberta town (McDonald-Harker, Bassi, and Haney forthcoming). Yet as Cutler (2016) found, the “subjective interpretations of the impact of severe events may be more important than objective impacts from such events to the formation of risk perception” (p. 6). This is important in a context in which views of and responses to disaster risk are highly malleable, emotionally laden, and responsive even to shifts in how issues are framed (Arvai et al. 2006). An emerging and important line of research also shows that gender matters for postdisaster environmental views. Connell (1990, 1995) noted that men’s environmental views tend to be more durable and that among men there is a clear resistance to change. And indeed, Milnes and Haney (2017) found that after disasters, women are more than twice as likely as men to say that their environmental views changed as a direct result of the disaster experience (see also Hamilton et al. 2012; Lujala, Lein, and Rød 2015; Marshall, Picou, and Beve 2005; Tanner and Árvai 2018), though this is a small and evolving literature.

**PEBs, before and after Disaster**

PEB is a multidimensional construct encompassing actions undertaken with the intention of positive environmental impact, some of them more difficult to carry out, others easier, and some of them (like hunting to control wildlife populations) highly contested (Larson et al. 2015). Specific measures used in research vary widely but usually include some combination of conservation activities (turning off lights), environmental citizenship (joining environmental groups or educating others), food and eating choices (eating less meat or eating locally), and transportation (biking more or flying less) (Markle 2013).

In some studies, environmental concern is a significant and robust predictor of PEBs (Kennedy, Krahn, and Krogman 2013a; Kennedy and Kmec 2018; Rhead, Elliot, and Upham 2018; Takahashi and Selfa 2015), but other studies have pointed us to the presence of a value-action incongruence whereby people concerned about the environment do not undertake concrete behaviors to protect it (Chai et al. 2015; Landry et al. 2018; Tam and Chan 2017; Walton and Austin 2011). We are therefore left with a still evolving knowledge base on the relationship between concern and PEB. We do know that household size, income, community dynamics, age, and marital status (Kennedy, Krahn, and Krogman 2014; Wilson, Tyedmers, and Spinney 2013) as well as the size and strength of social networks (Leombruni 2015) are all significant predictors of various PEBs. In a comprehensive literature review, Gifford and Nilsson (2014) outlined 18 distinct factors that serve as important predictors of environmental concern and behavior, including childhood experience, knowledge and education, personality characteristics, sense of control, values, worldviews, goals, feelings of responsibility, cognitive biases, place attachment, age, and gender. Those who feel more strongly attached to their environs and the surrounding community will undertake more protective
actions. Place attachment (Armstrong and Stedman 2019; Brehm, Eisenhauer, and Kranich 2006; Scannell and Gifford 2013), the quality of the local environment (Knight and Messer 2012), and community culture (Ford and Norgaard 2020) all figure prominently into residents’ decisions to engage in PEB. Work in Alberta by Kennedy et al. (2013a) shows that environmental concern translates into PEBs but not into reductions in actual household carbon footprint; PEB is not associated with household carbon footprint. Instead, it is wealth that is most closely associated with actual carbon footprint.

In postdisaster communities, the literature on PEB is scant, but much of that work derives from post-Katrina New Orleans. Returning New Orleanians established community gardens and urban farms (Kato 2013; Kato, Passidomo, and Harvey 2014), many at schools and in the community’s lowest income areas. At the same time, New Orleans invested heavily in alternative energies and by 2016 had become the eighth ranked city in the United States for per capita solar installations (Environment America 2016). One factor driving these postdisaster transitions in New Orleans was the erosion of trust for outside institutions, both governmental and private sector, which derived from residents’ experiences during the storm and recovery.

Outside of New Orleans, there is also some scattered evidence that disasters transform affected residents’ environmental subjectivities. On the basis of U.K. survey data, those who report experience of flooding express more concern over climate change, see it as less uncertain and feel more confident that their actions will have an effect on climate change. . . . These perceptual differences also translate into a greater willingness to save energy. (Spence et al. 2011:46)

Spence et al. (2011) concluded that a heightened sense of personal risk after disasters, coupled with a sense of personal efficacy, helps us understand who engages in PEB after disaster. They found that flooding had a minor impact on behavioral intentions. But those who had experienced a flood had a heightened sense of perceived instrumentality (ability to have an effect) on climate change, had higher levels of concern about climate change, were less uncertain about whether it existed, and perceived the local area to be more vulnerable. Work by Tidball (2012) also demonstrates how those affected by disaster interact and engage more with the natural environment after enduring the event.

On the basis of this literature, I expect that the 2013 southern Alberta flood provided an external shock for residents. This event challenged their preconceived notions of the severity of possible environmental events. It also provided a substantial disruption of residents’ routines, and familiar landmarks, as water infiltrated the homes of many people. As this occurred, I expect that residents, especially women, will begin to explore the relationship between locally felt weather events and the larger climate crisis, to begin mentally disinvesting in locally supported polluting industries (i.e., the oil and gas industry), to express newfound concern for environmental protection, and, perhaps most important, to begin undertaking new PEBs.

The Southern Alberta Flood

In June 2013, the normally arid Canadian province of Alberta experienced record-breaking rainfall of up to eight inches in 36 hours, which caused the Bow and the Elbow, two of the province’s largest rivers, to overtop their banks. This triggered unprecedented catastrophic flooding in southern Alberta, where 32 states of local emergency were declared, and the Canadian Armed Forces were deployed to help evacuate 175,000 people. The city of Calgary, the epicenter of the flood, witnessed one of the largest urban evacuations in the nation’s history, with more than 75,000 residents evacuated, and more than 10,000 of those residents flooded (Gandia 2013). The Insurance Bureau of Canada subsequently dubbed the flood the costliest disaster in Canadian history (CBC 2013).

Data and Methods

The analyses that follow make use of data from 40 in-depth interviews with affected residents, which took place in the fall of 2015, two years after the flood, an approach that both leaves time for new environmental practices to take hold as residents find a “new normal” and allows enough time for some of these practices to die out, allowing us to see whether they are temporally durable. Recruitment of these 40 participants was done through the community associations in the city’s 26 flood-affected neighborhoods (City of Calgary 2018). This recruitment followed a 2014 survey of several hundred residents in these neighborhoods in which community associations were key partners. Our parameters included only that the participants be “flood affected,” though we left that up to their interpretation. In the end, however, 39 of the 40 participants had residences that flooded. Twenty of these interviews were with participants who identified as men, and 20 identified as women. Like the neighborhoods in which they live, participants were generally middle class to wealthy and had at least a bachelor’s degree, and approximately one third worked in the oil and gas industry (with various others having family members employed in the industry). Interviews lasted between 60 and 180 minutes, with an average of 90 minutes. To thank participants, we offered them a $50 gift card to RONA, a Canadian-owned home improvement store.

We asked participants several questions that elicited responses related to their environmental views and practices, prior to and after the 2013 flood. These questions followed a survey the year before, which had indicated that about 40 percent of Calgarians had said their environmental views changed in some way, as a result of the flood. On that survey,
we left one open-ended item with which we asked them “how,” and indeed many participants discussed their changing views and practices (generally recycling, but not limited to that). Those open-ended responses formed the basis for the interview questions asked in 2015. Although the questions were open ended, our interview guide contained many prompts and probes we could use when participants struggled to answer. The interview guide had five main sections, of which the environment section was the fourth. In an oil-producing place where the environment is a sensitive and politically contentious topic, this question ordering allowed rapport to be built before arriving at the most difficult set of questions. The study was approved by the human research ethics board at Mount Royal University. All participant names have been changed to pseudonyms to ensure confidentiality.

Data were then open-coded by the author to identify key themes and ideas emerging from the interviews. Once these codes were established, data were independently coded in NVivo by the author and by a research assistant (with experience and training in qualitative analysis) to ensure intercoder reliability. This approach is commonly understood as “descriptive” or “pattern” coding (Maxwell 2005; Miles and Huberman 1994; Warren and Karner 2010) and is commonly used in postdisaster studies for examining deep understandings of such events (Phillips 1997, 2014). The analyses were then compared and contrasted with existing theory from environmental sociology to provide the analysis that follows.

Analysis

Shock, Disruption, and the Washing Away of Complacency

Many participants—and disproportionately women—spoke at length about the extreme shock and the psychological disturbance the flood triggered, as it ruptured ossified ways of thinking and doing as their homes and neighborhoods flooded. Leila, for instance, is a 48-year-old woman who lives in Calgary’s heavily flooded Bowness neighborhood. Although she evacuated in advance of the flood, she and her children returned quickly to find her basement filled with nine feet of floodwater and her first floor flooded as well. All her possessions “just went into the [trash] pile.” As she recalls,

even before we saw the river flowing through the house we were trying to pump water out. . . . Because you are just futilely trying to do something, so the water was flowing in the back and we were pumping it out of the front, and it was raining, so it added insult to injury.

Despite working frenetically with her children to pump out their house, virtually none of their belongings were salvageable. This loss was catastrophic for Leila.

One of the most compelling and traumatic stories of the flood came from Angelina, a 59-year-old freelance writer who had lived in Canada for 30 years. A resident of Sunnyside, she and her husband ended up with more than five feet of water in the basement of their recently renovated house, which was “completely wiped out.” This experience, she states, caused a “trauma which still lasts today.” She remarks that she still remembers the sound of the rushing water, “like someone had left a tub on—coming up through the basement. . . . For a long time I couldn’t have a bath because the sound of water running into the tub triggered me.” She describes the trauma involved with seeing portions of her city “obliterated” like Haiti and Nepal following their earthquakes, in 2010 and 2015, respectively.

According to Jackie, a 43-year-old mother who recently left her job in the oil industry, as the floodwaters advanced, she found herself wading through water to get home and try to salvage possessions. With the water rising quickly, she “actually sort of had to outrun the water as it was going down the side street across the back.” As she was packing up, first responders reached her door and told her “Okay, you are out now.” While she and her husband sat in the driveway discussing where to go, “the police were there and just saying ‘Go, go, go.’” This was a common response from participants and, indeed, one consistent with Haney (2017), who found that the most common way Calgarians learned about the evacuation order was when first responders knocked on their doors. This means that many residents had little time to pack, plan, and prepare.

One of the things that made this event so traumatic and shocking for participants was just how caught off guard they were. The unexpectedness was especially traumatic, as many members of the public misunderstand official flood risk projections (Highfield et al. 2013) and many others are uninformed about flood risk entirely (Thistlethwaite et al. 2017). Many of the participants in this study fell into these camps, but several also described having vague ideas that the Bow and Elbow rivers could be hazardous but, at the same time, not having ever considered that the floodwaters could ever reach their own homes or neighborhoods.

For many residents, the flood far exceeded their expectations of the possible extent of flooding, largely cultivated from their experiences in the far less extensive flood of 2005. According to Gary, a plumber and resident of Bowness, “We knew there was high water coming and what we expected was the ‘05 flood. We had no information that it was going to be more than that.” He continues,

We were told it was on social media, it was on the city website but we weren’t looking at the city website; we were carrying on life just like it was a normal day. All of a sudden, I had five firemen standing on my front doorstep saying we gotta get out. Where were those five firemen hours before?

In the end, Gary had more than $770,000 of damage to his house.

Gary’s expectation that the flood would be similar to the 2005 flood, which narrowly missed his home, is expected
given literature suggesting that one of the more robust and durable predictors of flood risk awareness is previous flood experience (Burningham, Fielding, and Thrush 2008). Other Calgarians lacked basic awareness about their own flood risk. Graham, a real estate agent living in the heavily flooded Bowness neighborhood, was one of those surprised residents. “As a realtor,” he says,

I was not aware I was in a flood plain and I have lived here for 20 years. I didn’t know that, and I know now and I know where I could have found that out but it never occurred to me. Never. Why? Because it’s a rare risk. We always [used] the term “hundred year flood” but we really didn’t have any concept as to what it meant because a hundred years ago Calgary barely existed.

Many other interview participants cited this “1-in-100-year flood” logic as a rationale that a catastrophic flood could not happen for another 100 years, a misunderstanding of annual flood probability. Similarly, Jennifer remarks on how the extent of flooding was, in her mind, completely unexpected: “I didn’t realize that a flood could do this kind of damage. I’m sure I’ve heard of areas flooding and I always just . . . I have no idea what that would be, how destructive the water could be. The danger!” She adds that her understanding of worst-case-scenario flood risk had been shaped by the much smaller 2005 Calgary flood, only 8 years earlier: “I thought that’s probably as bad as it could get.”

For many residents, the feelings of shock and surprise discussed above triggered a psychological unmooring that forced them to question their prior assumptions and actions around environmental issues and to confront risks that had previously avoided (Cerulo 2006; Zerubavel 2006). One source of complacency, in nondisaster times, is the tendency to think of environmental disasters as far-off events, in both space and time (DeSombre 2018). But as residents experienced the 2013 flood, they realized that these events affect actual people—like themselves—living in communities like their own. This is an uncomfortable thought, and as Rachel told us, “You know unless you’re made to think about it you don’t think about it, right?” As residents of a wealthy city of the Global North, the 2013 flood also made them consider how fragile their economy, public services, and infrastructure actually were. According to Bryan, “I realized how close anarchy can be. Like really chaos. . . . So I learned that while we take for granted all this infrastructure and society and everything we have, chaos is really quite close.” Bryan adds,

We’re not all as comfortable and as safe as we think we are. But any disaster, not specifically our disaster, any major disaster. It pulls on the fabric on the whole city, the whole area. . . . So I can’t imagine being in a second or third world country and a disaster happens how . . . it would be absolutely horrifying, as opposed to just financial hardship and discomfort.

These comparisons to “third world” countries were common among participants who had watched their safety, security, and quality infrastructure degrade or fail during the flood. Caleb, who works in the marketing department of a large downtown oil company, described portions of Calgary as looking like a “war zone” during the flood. The flood, for Caleb, revealed

how powerful nature can be. I can still see that water and hear that water rushing through. . . . It was just a roar. . . . We are all overloaded in a way with media, but to actually kind of live it to a degree is totally different and it really evokes different emotions and different thoughts, and a reflection of what is important and what isn’t.

Calgarians also began to question and reconsider their taken-for-granted knowledge about the environment. Allan tells us that

[the flood] took some of these applied ideas and theories and [made] them a little more real and tangible, like “Oh, it is clearcutting that causes this” and damning rivers causes this, and just understanding deeper the ecosystem side [of things].

For Roxanne, the flood also caused her beliefs and feelings to become more concrete, more real, and less esoteric. She says,

I have always been very aware of the environment and climate change . . . we lived quite an eco-conscious lifestyle anyway. . . . I don’t even think it has changed my point of view, it has just kind of set it in stone a bit more, like this is what is going to happen kids! This is what is going to happen if we don’t do something about it.

One of the takeaway points from these accounts is that, prior to the flood, residents certainly held beliefs about the environment and climate. They maintained knowledge—gleaned from various sources—about these dynamics. However, their experience in the flood cultivated an awareness that is anchored in emotionality, lived experience, and intricate connections between global process and local landscapes. In this sense, the findings connect to a broader literature that distinguishes between knowledge (academic, detached, and removed) and knowing (crafted through first-hand experiences and emotions) (Smith 1974, 1987). Prior sociological literature has also documented this epistemic chasm between knowing and knowledge, and the tendency for disaster experience to forge a deeper way of knowing (Barber and Haney 2016). A good example of how the flood helped Calgarians bridge this epistemic chasm is Allison, as she recounts that

there was a bit of separation for me. It was easier to intellectualize it [before the flood], than entering into something very different even though relatively speaking we got off so easy. But it was “oh crap this was in my back yard, literally.” It’s right here and—I do find now when I see pictures of floods sweeping
through places elsewhere in the world that, yeah, I think I have
different reaction to it than I did. I can’t distance myself the
same way. . . . [I] have to stop watching the news because I just
find it completely overwhelming.

Emergent Environmental Concern

How did disaster-affected residents express environmental
concern after the flood? After experiencing the trauma and
disruption associated with disaster, Leila found herself thinking
differently about environmental dynamics, risk, and change. Admittedly not an environmentalist prior to the flood, she reports that her views are now

stronger on that we need to take care of what we have; we need
to watch. . . . to try and not affect how much we have, whether the
flood occurred because of a weird climate change—there was
heavy rains, snowfall and everything else—you know, they
can’t say that but it definitely makes you look at it differently and is there climate change going on? What is my impact? What
is my input onto it? Am I affecting it? How can I help to prevent
some of the stuff that maybe happens?

Digging deeper into Leila’s biography complicates these
reflections even further. Like many Calgarians, Leila’s husband is employed in the oil and gas industry, arguably Alberta’s main industry and economic driver. Despite her husband’s profession, Leila believes that the flood caused her to shift her support to developing alternatives to fossil
fuels. As she says,

I think we need to try and have a push of people trying to find alternate sources of energy for us to use . . . and we have to look at a different way on what we consume, how we consume and what we are going to buy, and how we live our lives. In the city
we are highly dependent on driving,

and that needs to change in her view. In fact, when asked
about whether Canada should increase oil production from its tar sands, Leila says, “I don’t think we should. . . . I think [change] is going to happen when, like the flood, shit hits the fan . . . I think it is going to happen.” Timothy, an engineer working in the oil and gas industry, feels passionate about rebuilding his home using environmentally friendly products, LED lighting, better insulation, and so on. He asks,
“How would I describe my environmental views? I guess before it would be more passive, and now I am more involved with it, right? Now it is more personal.”

One way that many interview participants expressed their environmental concern was as doubt or anxiety over what the future would hold. According to Allison,

My children are facing not only major changes in their own lives but if they’re thinking about having children. . . . I can’t even imagine what they would be feeling like in terms of going
forward. My parents had no doubt that they were bringing their

children into a world that they thought was fantastic. And I’m not as convinced that my kids will be able to do that. I think we still have a pretty fantastic world but I’m not convinced it’ll be there in the same way if we don’t make some rather major changes.

At a societal level, Phoebe expects that as catastrophes happen more frequently and our infrastructure and everyday world is disrupted, “most people won’t attribute that to climate change.” Tasha observes that “climate change will warm Alberta and the glaciers will melt faster. The fresh water will change coming down from the mountains.” She worries about water restrictions and fewer tourism dollars, in particular.

It is also worth noting here that this concern for the future, and a renewed environmental concern more broadly, was expressed almost only by women. The qualitative interview data reveal almost no references concern over the impending climate crisis in men’s interviews. Consistent with extant work in ecofeminism (Nagel 2015), women express concern about future catastrophic environmental change, whereas the men who express concern tend to do so in very temporally restricted ways, focused on the here and now. Reflections from participants such as Leila and Allison connect to a nascent literature on women’s changing postdisaster environmental views (Marshall et al. 2005; Morioka 2014) and indeed, women participants spoke at much greater length, and in more detail, about changes in views that occurred as a direct result of the flood. This points both to men’s particular subjectivities as complacent and risk-tolerant (McCright and Dunlap 2011, 2013) and women’s increased likelihood of attitudinal change after direct experience in an environmental disaster (Milnes and Haney 2017). I am hopeful that future research will continue to unpack not only how men and women differ with regard to environmental concern but the ways in which men’s and women’s concerns are temporally, and also spatially, distinct from one another.

As discussed above, for many participants, the 2013 flood was eye opening and prompted them to worry about the environment and about climate change in ways that they never did prior to it. At the same time, for a small minority of people (all men, in fact), enduring the flood and its aftermath actually resulted in lower environmental concern. Some, like Matthew, began to see environmental change and degradation as inevitable. In fact, Matthew links his lack of environmental concern to his identity as an Albertan. According to him, he is “Somewhat of an environmentalist. Somewhat. After all, I am an Albertan. Ummm yeah, less than I was 10 years ago. Less an environmentalist. I don’t know, I try. That’s my environmental views: I try.”

He adds that

I used to be more outspoken. I used to do a lot more little things for the environment. And now I drive my car a lot. A lot more than I did before. . . . I’ll sort of pick my battles here and there.
Despite feeling unconcerned about the environment—and more accurately, believing that climate change is incorrigible or inevitable—Matthew nevertheless notes that he makes more of an effort to live in environmentally friendly ways since the flood. He says that while he went through the flood, he recognized that I was a hypocrite in a lot of ways. . . . And so now I’ll do some things. Like I compost. I bike sometimes. Reuse some containers. Buy things in bulk. Have less waste. Turn down the heat. But at the same time, like I live in a home in Calgary in the winter and I use a lot of heat and I drive and buy gasoline fueled car and . . . [laughing]. I don’t know.

Although Matthew does engage in some PEBs, he sees these actions as relatively futile given the resources he consumes by virtue of living where he does. Although it may seem paradoxical for someone who expresses little concern to nevertheless engage in PEB, his example points to the conflicted feelings that many men in the study voiced: an emotional cocktail of concern, resistance, doubt, fatalism, and apprehension. Although their own environmental subjectivities, steeped in privilege and oil boosterism, may inhibit them from giving voice to environmental concerns, they nevertheless feel as though they should be doing something, even if their own views are not necessarily logically consistent.

**Emergent PEBs**

Did the emergent environmental concern explored above translate into concrete PEBs? The data demonstrate that it did for some participants—disproportionately women—but that these PEBs were somewhat circumscribed, were household level, and required very small commitments of time and resources. Leila reports starting to compost her household food waste, to shop more locally, to drive her car fewer miles, and to buy products produced closer to home. Perhaps most important, Leila spoke of encouraging her children to develop an increased environmental concern. She believes that we just have to rely less on oil and gas which I hope I can get my kids into. They are pretty good at looking and knowing what their imprint and impact is, I guess, but just making them conscious and thinking of it, and hoping they don’t go into oil and gas!

This comment is particularly telling, as Leila’s household is dependent on income from the oil and gas sector, yet at the same time, she recognizes how our use of fossil fuels ultimately drives climate change and produces disaster risk; as a result, she is attempting to steer her children into a different career path.

Some, like Allison, told us that she might be engaging in more environmental behaviors than before the flood, but when she does, she does so with more resolve and emotion. She says, I don’t actually think I am doing anything different than I was before. I think I’ve been this way for a long time and it hasn’t changed—become a little more firmly planted, I guess. It’s just—yeah it’s more emotional than it was before.

This point about emotionality is key, because sociological research often points to how people engage in emotional management to minimize or ignore unpleasant information (Cerulo 2006; Norgaard 2011; Zerubavel 2006), but here we instead see how direct experience in a disaster can give rise to new emotions and urgency, thereby prompting action. Although these insights into PEB are illustrative, it is also important to look at the specific behaviors in which participants engaged.

First, they discussed efforts to decrease their overall consumption. Magdoff and Foster (2011) taught us that under capitalism’s growth imperative, “we need things consumed, burned up, worn out, replaced, and discarded at an ever increasing pace. We need to have people eat, drink, dress, ride, live, with ever more complicated, and therefore constantly more expensive consumption” (p. 49). This consumption naturally carries a large environmental impact. At the same time, being a wealthy city of the Global North, and one fueled by high-paying jobs in the oil and gas industry, many residents engaged in what Veblen (1899) referred to as “conspicuous consumption”: consumptive behavior done to confer status and prestige.

After the flood, did Calgarians begin this drive toward consuming less? Many did. When asked about changes since the flood, Tasha tells us that she became conscious about recycling [since the flood]. I am very conscious about having my own bags when I go grocery shopping. I am very conscious about all the waste that comes with going to Costco, but I haven’t really. . . . I haven’t done anything other than that. I don’t drive a lot. I cook all my own foods. I don’t buy a lot of prepackaged foods.

Even though Tasha tells us that she has not done a lot, she lists many concrete actions that she is indeed taking to consume and discard less. Martin undertakes many of the same actions, as he “fish[es] more cans out of other people’s garbage than I used to! Isn’t that weird? I probably drive less, probably shop more scrupulously, probably contribute more to causes that are directed toward preventing further climate degradation.”

Scott discusses how the disaster made him reassess his values and change his consumption patterns accordingly. He says, I hate people who don’t take responsibility and just take and take and take, because the environment can’t continue if we do this, and that is how [the flood] has changed me. I am even more rabid about it! [since the flood] I want to drive a hybrid car, I want to get now more fuel-efficient vehicles. I could afford a big car . . . [but] I want to get a hybrid car, I want to downsize into a
smaller house and sell our house and we are in the process of doing that.

Scott tells us that the flood was the last straw and made him decide that his exploitation of the earth (“taking,” as he referred to it) could not continue.

For several participants, consumption patterns did not change, but their methods for dealing with the waste from household consumption did indeed change. Graham best illustrates this as he exclaims, “We recycle. We recycle! We don’t drive less. I turn the electric lights off—I try to.” Despite the ubiquity of municipal recycling services, Emily admits to not knowing about the need to recycle prior to the flood. But the flood prompted her to learn and to start. She says,

we never used to recycle anything because we never knew we were supposed to and things have changed so much. Now, we are recycling, reusing and reducing stuff all the time and I know my kids are big-time Green Party [supporters] so I have been forced to go along, you know, saving the water and all that stuff!

For Emily, both the flood and the influence of her environmentally minded children have caused her to start recycling and to waste less water.

This mention of saving water is particularly illustrative, as Alberta is the driest Canadian province, and estimates have the province getting drier as rainfall decreases and glacier-fed rivers dry up (Faramarzi et al. 2017). Timothy, an oil and gas geologist, underscores the importance of using less water: “We need to be careful of how much water we use. . . . So now it is just reinforced so I am more pro-environment.” Jennifer tells us that to save water, she plans on changing the landscaping of her property as she rebuilds her home. She says,

I’m actually not gonna have grass in my new house. I’m gonna have Astro-turf in the front yard [laughing]. So I think not watering. Like I think why? Why are people doing this? We are watering something so we can cut it and throw it away. It’s using electricity and water and throwing it into the landfill, just for appearance? Like I’m not of that mindset, that you should just do something because [of how] it looks.

Research demonstrates that North Americans believe that their green, well-manicured lawns convey status and wealth (Robbins 2007). Yet now Jennifer rejects this conspicuous-consumption approach, preferring instead a permanent installation of fake grass that never needs watering.

Although recycling is surely a PEB, its impact is very small, of course. And participants realize this. Mary-Jean tells us that “recycling, composting, walking when we could drive but don’t have to. Those are pretty minor steps, but I think we could go further.” Several participants acknowledged this need to “go further” but could not provide any details about how they might do so. Martin similarly comments that

“They are fracking [hydraulic fracturing] the hell out of Oklahoma and I am, you know, crushing cans in Calgary. . . . But you have to keep doing it, right? We got in this position by millions of people doing small things, right? A tank of gas at a time; we got in this problem a tank of gas at a time and we are going to get out of it. . . . A tank of gas at a time.

One of the largest emitters of carbon for North Americans is travel, particularly by plane and by car (Nocera and Cavallaro 2011). The participants in my study realize this, and several had undertaken steps to curtail their transportation or seek alternative modes of transportation. Allison says, “I know I make different choices now [since the flood] about when I use the car and when I don’t.” She believes that this curtailment likely would not have happened had it not been for the flood and her newfound environmental concern. This approach to transportation is aided by Allison’s mode of habitation. She resides in a housing cooperative that, she says, has won awards for its green initiatives. “We carpool when we have meetings to go to. We choose to live in this co-op that’s in a place where we can walk to most places.”

Jennifer likewise has many ideas she is implementing for lowering her carbon footprint, many of them related to transportation. As she says, she’s aiming for a

smaller carbon footprint. Buy locally. . . . consider the flights if you’re going somewhere. Do I really need to take that flight? Do I need to buy something from Chile that was imported? Can I buy something more locally? Can I avoid buying something made in China?

She later adds that she supports more “hybrid cars. More use of the train. Wind power. I think one day I’m gonna be putting a solar panel on my roof. Definitely. Harness the sun, harness the wind.”

Apart from transportation, many other participants discussed their homes and modes of living and were engaged in strategies to decrease their household carbon emissions. For many, the flood made this possible, as it necessitated extensive renovations. According to Edward,

we have a high efficiency furnace in the house, a more efficient hot water system, and all sorts of things that we have done that, you know, in some ways we were fortunate that someone else paid for those, but we have taken steps to do that.

He adds that “we eat locally as much as we can, and we can afford to do all these things.” Timothy hopes that when he retires from his job and moves, he will buy a “net-zero house.” Even Bradley, who like many men in the study told us how he believes that climate change is not caused by carbon emissions, discussed some PEBs adopted since the flood. According to him, “we are doing the things—replacing all our lightbulbs in the house . . . with LED’s where it’s feasible.”
For those not able to trim their transportation-related emissions, the flood prompted a renewed sense of guilt. Roxanne reflects, “I still have family in the UK so I am going to still have to fly back there, and I am going to feel awful doing it because that is one of the big contributors.” She goes one step further, adding that the flood even caused her to think about her fertility plans, as “we even debated whether we were going to have a child because of the whole overpopulation thing.”

Several participants discussed new or renewed efforts to grow food at a local level. As discussed earlier, it is increasingly common for disaster-affected communities such as New Orleans to begin gardening (Kato et al. 2014; Passidomo 2014). Angelina, without any prompting, discusses how her traumatic flood experience intersected with her environmental practices. As she says, “We grow vegetables in the backyard—it was completely untouched by the flood, but I couldn’t even harvest it. I was like . . . if I wasn’t making food with others—for others—I couldn’t eat.” She also discusses how she and her husband “try to buy local,” and a number of other small, household-level practices. Similarly, Allan, a 45-year-old long-term resident of Calgary, who owns a boutique sustainability company, remarked that he and his spouse lead a life that “has always been about building that resiliency around gardening, the chickens, the bees, you know, we have this little urban homestead and the flood took it all out.” Despite the loss of his urban farm, Allan was in the process of rebuilding and reconstituting his garden space with a renewed passion and vigor. Allan adds that he now attempts to eat more locally, saying “maybe we don’t need mangos or bananas or oranges all the time, you know? Maybe we need to think a little more local or regional for food choices.” Although Allan grew food on his property even before the flood, not all Calgarians did. Frank, for instance, started growing only after the flood and told us, “We can start growing. . . . A lot of vegetables right here, right? Or buy them locally and stuff like that. Why truck it in from Florida or California if you can grow it right here, right?”

The final PEB discussed by flood-affected community members is perhaps the most important; a few people discussed with us how the flood prompted them to teach, talk, and educate others about the environment and about climate change. This was a strategy most often taken by those who already expressed environmental concern prior to the flood. For Allison, one of the biggest environmental behaviors has been trying to influence others, but as she recalls discussing with her father,

Anytime I challenged him, anytime I talked to him about, the fact that driving a big gas guzzler of a car, the fact that our gas was cheap as it is, and the whole idea of the production of oil being problematic and the fact that there were alternatives. . . . He would just kind of shrug his shoulders and go “ahhhh, I just don’t think that matters.” And that was ignorance. It was just he didn’t know and he didn’t want to know. So he just put the blinders and said “nevermind.” He said “my grandchildren are the ones who are gonna have to deal with that.” Like, thanks dude! That’s great! Great, yeah. It’s my kids you are talking about.

This frustration in talking with her father both prompted Allison to attempt to educate him about climate change and also to talk to anyone who would listen about it.

Many of my participants had difficulty conjuring the language necessary to discuss not only their environmental views but the concrete actions they were taking. This occurs because presumably they had never been asked about their PEBs before. When we asked if she had undertaken any PEBs since the flood, Chantelle told us, “I would say pretty average [laughing]. You know? Don’t litter. Recycle. That kind of thing.” When asked whether she thought about the environment prior to the flood, she again said, “Just again, like the typical.” Struggling to describe her environmentalism in terms other than “average” or “typical,” Chantelle’s response was common among participants. Her laughter, of course, suggests that she realizes this is explanation lacks the needed clarity, but she nevertheless struggles to describe her actions in any more detail. It is also worth noting that the “average” or “typical” lifestyle in Canada, as in many wealthy nations, is one with a very high carbon footprint (Solarin 2019).

Although postdisaster PEBs were quite common, there were some people who discussed with us how the flood made it more difficult to do anything positive for the environment. Some, like Caleb, simply feel trapped. He says,

I don’t really think my behavior has changed as a result. . . . My contribution to greenhouse gases is probably the same now as it was before, and I think that is a bit of a trap for all of us, there is really not much you can do since we rely on our vehicles.

But others have actually seen their effect on the environment increase since the flood. When asked if she had been taking concrete actions to decrease her carbon footprint, Phoebe told us,

No, if anything it’s probably gotten worse because of all the personal changes. . . . I actually think that if we get more natural disasters people will care even less about the environment. Because they’ll be so focused on their own individual lives and survival that the big picture becomes irrelevant. So . . . while things are still good, now is the time to make change because people have more capacity to deal with the change and to take on the change. But if you put people in Louisiana and say stop driving your car? They’ll tell you where to go, ‘cause they need to go to the store to buy—like they don’t care when they’re in crisis. . . . When you don’t have the time, or the energy, or the money to care, you care less.

Phoebe’s comment is interesting, of course, because New Orleans became renowned for its environmental changes
following Hurricane Katrina, including school gardens, farmer’s markets, solar panels, and environmentally friendly new home construction. Yet Phoebe constructed a narrative in which people in Louisiana affected by a disaster do not have the time, money, or capacity to care about the environment or to change their behaviors and used this narrative to justify her own behaviors, which she says have “gotten worse” since the flood. Like Phoebe, Matthew notes that since the flood, “I’m actually driving more and biking less. Which is pretty lame. Yeah I probably should be doing more.”

Discussion and Conclusion

This article is one of the early efforts to look at how and why people change their environmental views and practices as a result of experiencing an environmental disaster. In doing so, it outlines the social-psychological transition that those individuals experience. First, they experience shock and trauma, which unmoors them from the status quo and from their usual community functioning, representing a disruption of their ontological security. As journalist Naomi Klein (2014) wrote, “the world tends to look a little different when the objects we have worked our whole lives to accumulate are suddenly floating down the street, or smashed into pieces, turned to garbage” (p. 465). This experience caused many of the participants to break with their usual silence, denial, and careful emotional management of environmental risks and to express a newfound concern for the environment. Second, the participants in this study discussed how they were undertaking more PEBs since the flood. Although most of these PEBs are small (recycling more, rebuilding using more energy-efficient products, and so on), the participants nevertheless connect these changes to the experience of environmental disaster.

These changes were especially pronounced among women, suggesting that like previous research in the field, women are more prone to embracing environmentalism over time (Hamilton et al. 2012; Milnes and Haney 2017; Sundström and McCright 2014), whereas men’s environmental views—more complacent and prone to climate denialism—are durable to environmental shocks and risks (Connell 1990; McCright and Dunlap 2013; McCright and Xiao 2014). Particularly in a wealthy Canadian city known as the economic hub of the tar sands, residents normally espouse conservative or denialist environmental views to protect their social power, wealth, and livelihoods (Davidson and MacKendrick 2004; Truong, Davidson, and Parkins 2019). Yet for some of them, mainly women, the shock and disruption of disaster ruptures their complacency and generates a newfound environmental concern. In a city of “antireflexivity,” firsthand, direct experience in a flood allowed some environmental reflexivity to emerge.

The gender finding—that men had much less to say about their postdisaster environmental views and practices—maps onto larger discussions about privilege and power. The men in this study embody a specific environmental subjectivity: as (mostly) wealthy men, living in one of the wealthiest cities in North America, and in many cases employed directly by oil and gas companies. As such, they are accustomed to a high degree of societal power and are unaccustomed and uncomfortable with forces such as the climate crisis that they are unable to control. Although they will likely be able to purchase safety from many of the coming environmental events, the climate crisis for them nevertheless remains an unspoken and uncomfortable topic, which they either avoid discussing (Zerubavel 2006) or attempt to spin in a positive light (Cerulo 2006).

Previous research sensitizes us to how fossil fuel–extracting communities (Bell 2016; Givens et al. 2020; Malin 2015), in general, and Alberta (Davidson 2018; Davidson and Haan 2011; Davidson and MacKendrick 2004), in particular, receive public discourse shaped by the fossil fuel industry. The hegemony of this industry, coupled with the wealth and privilege it allows some to partake in, give many residents very particular environmental subjectivities and worldviews that deny anthropogenic climate change and remain skeptical of environmentalism. Yet I find that even in Calgary, the financial epicenter for Canada’s tar sands, the disaster prompted people to express more concern for the environment. These findings suggest that even in wealthy fossil fuel–dependent communities of the Global North, as residents begin to experience more environmental disasters, many of them will learn from these events and take more care to ameliorate the climate crisis through their everyday actions. Thus, this work suggests that even wealthy, oil-dependent places have the potential for environmental and attitudinal changes as disasters become more common.

Admittedly, the changes in PEBs discussed by participants are fairly small in scope: changing light bulbs, recycling, or composting. Although positive, all evidence indicates that the climate crisis is upon us now (Gills and Morgan 2019) and that radical decreases in carbon emissions must begin immediately, and should have begun decades ago, in order to stave off catastrophe. Given the immediacy of the problem, are the participants’ somewhat small-scale and limited actions commensurate with the environmental changes we face? Likely not. Dyer (2009) wrote that “all the stuff about changing light bulbs and driving less, although it is useful for raising consciousness and gives people some sense of control over their fate, is practically irrelevant to the outcome of decarbonizing our economy.” Although the actual PEBs adopted are small in scope, and many may have only a marginal effect on actual carbon footprints, the findings nevertheless allow some cautious optimism, particularly as change takes hold among the wealthiest residents of a wealthy, neoliberal, oil-producing city; if change can occur there, I would argue that it can occur most anywhere.
This article carries some limitations, not the least of which is the two years between the flood and the interviews. Sooner interviews might have allowed us to better understand how newfound concern and PEBs grew directly out of the flood experience, as the flood experience would have been a sharper memory. At the same time, the two years allowed us to discern which PEBs were fairly durable, quasi-permanent lifestyle changes and which (the ones that had already ceased) were not. Although the research setting (Calgary) is surely distinct by virtue of its reliance on the oil and gas industry, possibly limiting generalizability and theoretical elaboration, this also presented a unique opportunity to study wealthy, fossil fuel–dependent residents of a Global North city, the very individuals most responsible for the climate crisis and most in need of attitudinal and behavioral changes.

As sociologists have begun to take the climate crisis more seriously (Dietz, Shwom, and Whitley 2020; Dunlap and Brulle 2015; Klinenberg et al. 2020), attention is rightly turning to how wealthy countries such as the United States and Canada might alter patterns of trade, transportation, and habitation to drastically cut carbon emissions. One answer was identified by Bell (2015), who pointed out that the nations that use the most fossil fuel energy do not report the highest levels of happiness or life satisfaction. North Americans could use perhaps only half as much energy as we currently do, without noticing any changes to quality of life. It may mean, of course, adjusting our lifestyles; staying closer to home and traveling less, for instance. As Kennedy, Krahn, and Krogman (2013b) pointed out, it may also include “downshifting,” or strategically working fewer hours, earning less, doing more work for ourselves, and depending less on the marketplace for the provision of everyday goods. Through downshifting and staying closer to home, we may find our communities strengthened.

Acknowledgments

I thank a dedicated team of research assistants (Angela Laughton, Travis Milnes, Morah Mackinmon, Priya Kaila, Grace Ajele, Victoria Stamper, Isabelle Sinclair, and Daran Gray-Scholz) for their hard work on this project. Gratitude also goes to the flood-affected residents who took the time to share their experiences and views with us.

Funding

The author disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by an Insight Grant from the Social Sciences and Humanities Research Council of Canada (grant 435-2014-1008).

References

Akerkar, Supriya, and Maureen Fordham. 2017. “Gender, Place and Mental Health Recovery in Disasters: Addressing Issues of Equality and Difference.” *International Journal of Disaster Risk Reduction* 23:218–30.

Andrew, Diana, Tom Buchanan, and Tim Haney. Forthcoming. “Gender Differences in Environmentalism among Students at a Southern University: The Impact of Gender Role Attitudes and University Experience.” *Social Science Journal*.

Armstrong, Andrea, and Richard C. Stedman. 2019. “Understanding Local Environmental Concern: The Importance of Place.” *Rural Sociology* 84(1):93–122.

Arvai, Joseph, Robin Gregory, Dan Ohlson, Bruce Blackwell, and Robert Gray. 2006. “Letdowns, Wake-Up Calls, and Constructed Preferences: People’s Responses to Fuel and Wildfire Risks.” *Journal of Forestry* 104(4):173–81.

Barber, Kristen, and Timothy J. Haney. 2016. “The Experiential Gap in Disaster Research: Feminist Epistemology and the Contribution of Local Affected Researchers.” *Sociological Spectrum* 36(2):57–74.

Bell, Michael Mayerfeld, and Michael S. Carolan. 2004. *An Invitation to Environmental Sociology*. Thousand Oaks, CA: Pine Forge.

Bell, Shannon Elizabeth. 2015. “Energy, Society, and the Environment.” Pp. 137–60 in *Twenty Lessons in Environmental Sociology*, edited by K. A. Gould and T. L. Lewis. New York: Oxford University Press.

Bell, Shannon Elizabeth. 2016. *Fighting King Coal: Challenges to Micromobilization in Central Appalachia*. Cambridge, MA: MIT Press.

Birkland, Thomas A. 2006. *Lessons of Disaster: Policy Change after Catastrophic Events*. Washington, DC: Georgetown University Press.

Bishop, Bradford H. 2014. “Focusing Events and Public Opinion: Evidence from the Deepwater Horizon Disaster.” *Political Behavior* 36(1):1–22.

Brehm, Joan M., Brian W. Eisenhauer, and Richard S. Kramnick. 2006. “Community Attachments as Predictors of Local Environmental Concern: The Case for Multiple Dimensions of Attachment.” *American Behavioral Scientist* 50(2):142–65.

Brody, Samuel D., Sammy Zahran, Arnold Vedlitz, and Himanshu Grover. 2008. “Examining the Relationship between Physical Vulnerability and Public Perceptions of Global Climate Change in the United States.” *Environment and Behavior* 40(1):72–95.

Brulle, Robert J., and Kari Marie Norgaard. 2019. “Avoiding Cultural Trauma: Climate Change and Social Inertia.” *Environmental Politics* 28(5):886–908.

Bubeck, P., W.J.W. Botzen, and J.C.J.H. Aerts. 2012. “A Review of Risk Perceptions and Other Factors That Influence Flood Mitigation Behavior.” *Risk Analysis* 32(9):1481–95.

Burningham, Kate, Jane Fielding, and Diana Thrush. 2008. “‘It’ll Never Happen to Me’: Understanding Public Awareness of Local Flood Risk.” *Disasters* 32(2):216–38.

CBC (Canadian Broadcasting Corporation). 2013. “Alberta Floods Costliest Natural Disaster in Canadian History.”

Cerulo, Karen A. 2006. *Never Saw It Coming: Cultural Challenges to Envisioning the Worst*. Chicago: University of Chicago Press.

Chai, Andreas, Graham Bradley, Alex Lo, and Joseph Reser. 2015. “What Time to Adapt? The Role of Discretionary Time in Sustaining the Climate Change Value-Action Gap.” *Ecological Economics* 116:95–107.

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City of Calgary. 2018. “Community Associations.” Retrieved July 14, 2020. https://www.calgary.ca/cpsps/cns/community-associations.html.

Clarke, Lee. 2006. Worst Cases: Terror and Catastrophe in the Popular Imagination. Chicago: University of Chicago Press.

Connell, Raewyn. 1990. “A Whole New World: Remaking Masculinity in the Context of the Environmental Movement.” Gender & Society 4(4):452–78.

Connell, R. W. 1995. Masculinities. Berkeley: University of California Press.

Cutler, Matthew J. 2016. “Class, Ideology, and Severe Weather: How the Interaction of Social and Physical Factors Shape Climate Change Threat Perceptions among Coastal US Residents.” Environmental Sociology 2(3):276–85.

Davidson, Debra J. 2018. “Evaluating the Effects of Living with Contamination from the Lens of Trauma: A Case Study of Fracking Development in Alberta, Canada.” Environmental Sociology 4(2):196–209.

Dietz, Thomas, Linda Kalof, and Paul C. Stern. 2002. “Gender, Values, and Environmentalism.” Social Science Quarterly 83(1):353–64.

Dyer, Gwynne. 2009. Climate Wars: The Fight for Survival as the World Overheats. London: OneWorld Publications.

Environment America. 2016. “Shining Cities 2016: How Smart Local Policies Are Expanding Solar Power in America.” Retrieved January 31, 2021. https://environmentamerica.org/sites/environment/files/reports/EA_shiningcities2016_scn.pdf.

Erikson, Kai. 1976. Everything in Its Path: Destruction of Community in the Buffalo Creek Flood. New York: Simon & Schuster.

Faramarzi, Monireh, Karim C. Abbaspour, W.L.V. Adamowicz, Wei Lu, Jon Fennell, Alexander J. B. Zehnder, and Greg G. Goss. 2017. “Uncertainty Based Assessment of Dynamic Freshwater Scarcity in Semi-arid Watersheds of Alberta, Canada.” Journal of Hydrology: Regional Studies 9(1):48–68.

Ford, Allison, and Kari Marie Norgaard. 2020. “Whose Everyday Climate Cultures? Environmental Subjectivities and Invisibility in Climate Change Discourse.” Climatic Change 163:43–62.

Franzen, Axel, and Reto Meyer. 2010. “Environmental Attitudes in Cross-National Perspective: A Multilevel Analysis of the ISSP 1993 and 2000.” European Sociological Review 26(2):219–34.

Fu, Albert S. 2016. “Connecting Urban and Environmental Catastrophe: Linking Natural Disaster, the Built Environment, and Capitalism.” Environmental Sociology 2(4):365–74.

Gandia, Renato. 2013. “Calgary Flood Damage Will Force as Many as 10,000 People from Their Homes for a Long Time.” The Edmonton Sun, June 28.

Giddens, Anthony. 1991. Modernity and Self-Identity: Self and Society in the Modern Age. Cambridge, MA: Polity.

Gifford, Robert, and Andreas Nilsson. 2014. “Personal and Social Factors That Influence Pro-environmental Concern and Behaviour: A Review.” International Journal of Psychology 49(3):141–57.

Gill, Duane, and J. Steven Picou. 1998. “Technological Disaster and Chronic Community Stress.” Society & Natural Resources 11(8):795–815.

Gill, Duane A. 2007. “Secondary Trauma or Secondary Disaster? Insights from Hurricane Katrina.” Sociological Spectrum 27(6):613–32.

Gill, Duane A., J. Steven Picou, and Liesel A. Ritchie. 2012. “The Exxon Valdez and BP Oil Spills: A Comparison of Initial Social and Psychological Impacts.” American Behavioral Scientist 56(1):3–23.

Gills, Barry, and Jamie Morgan. 2019. “Global Climate Emergency: After COP24, Climate Science, Urgency, and the Threat to Humanity.” Globalizations 17(6):885–902.

Givens, Jennifer E., Shawn Olson Hazboun, Michael D. Briscoe, and Richard S. Krannich. 2020. “Climate Change Views, Energy Policy Support, and Personal Action in the Intermountain West: The Anti-reflexivity Effect.” Society & Natural Resources. Retrieved January 31, 2021. https://www.tandfonline.com/doi/abs/10.1080/08941920.2020.1769782?journalCode=usnr20.

Gorman-Murray, Andrew, Scott McKinnon, and Dale Dominey-Howes. 2014. “Queer Domicide: LGBT Displacement and Home Loss in Natural Disaster Impact, Response, and Recovery.” Home Cultures 11(2):237–61.

Gotham, Kevin F., Mike Blum, and Richard Campanella. 2014. “Toward a New Normal: Trauma, Diversity, and the New Orleans Urban Long-Term Research Area Exploratory (ULTRA-Ex) Project.” Cities and the Environment 7(1):1–27.

Gotham, Kevin Fox, and Miriam Greenberg. 2014. Crisis Cities: Disaster and Redevelopment in New York and New Orleans. New York: Oxford University Press.

Hamilton, Lawrence C. 2011. “Education, Politics and Opinions about Climate Change Evidence for Interaction Effects.” Climatic Change 104(2):231–42.

Hamilton, Lawrence C., Joel Hartter, Mary Lernack-Stampone, David W. Moore, and Thomas G. Safford. 2015. “Tracking Public Beliefs about Anthropogenic Climate Change.” PLoS ONE 10(9):1–14.

Hamilton, Lawrence C., Thomas G. Safford, and Jessica D. Ulrich. 2012. “In the Wake of the Spill: Environmental Views along the Gulf Coast.” Social Science Quarterly 93(4):1053–64.

Haney, Timothy J. 2017. “Rising Waters, Difficult Decisions: Findings and Recommendations from the Calgary Flood Project.” Calgary, AB, Canada: Centre for Community Disaster Research, Mount Royal University.

Haney, Timothy J., and Daran Gray-Scholz. 2020. “Flooding and the ‘New Normal’: What Is the Role of Gender in Experiences of Post-disaster Ontological Security?” Disasters 44(2):262–84.
Haney, Timothy J., and Caroline McDonald-Harker. 2017. “‘The River Is Not the Same Anymore’: Environmental Risk and Uncertainty in the Aftermath of the High River, Alberta, Flood.” Social Currents 4(6):594–612.

Harlan, Sharon L., David N. Pellow, and J. Timmons Roberts. 2015. “Climate Justice and Inequality.” Pp. 127–63 in Climate Change and Society, edited by R. E. Dunlap and R. J. Brulle. New York: Oxford University Press.

Harries, Tim. 2008. “Feeling Secure or Being Secure? Why It Can Seem Better Not to Protect Yourself against a Natural Hazard.” Health, Risk & Society 10(5):479–90.

Hawkins, Robert L., and Katherine Maurer. 2011. “‘You Fix My Community, You Have Fixed My Life’: The Disruption and Rebuilding of Ontological Security in New Orleans.” Disasters 35(1):143–59.

Hidalgo, Danielle Antoinette, and Kristen Barber. 2007. Narrating the Storm: Sociological Stories of Hurricane Katrina. Cambridge, UK: Cambridge Scholars.

Highfield, Wesley E., Sarah A. Norman, and Samuel D. Brody. 2013. “Examining the 100-Year Floodplain as a Metric of Risk, Loss, and Household Adjustment.” Risk Analysis 33(2):186–91.

Hiscock, Rosemary, Ade Kearns, Sally MacIntyre, and Anne Ellaway. 2001. “Ontological Security and Psycho-Social Benefits from the Home: Qualitative Evidence on Issues of Tenure.” Housing, Theory and Society 18(1–2):50–66.

Hopkins, Jonathan, and Jeff Warburton. 2015. “‘Local Perception of Infrequent, Extreme Upland Flash Flooding: Prisoners of Experience?’” Disasters 39(3):546–69.

IPCC (Intergovernmental Panel on Climate Change). 2015. “Climate Change 2014: Synthesis Report.” Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: Intergovernmental Panel on Climate Change.

Kalof, Linda, Thomas Dietz, Gregory Guagnano, and Paul C. Stern. 2016. “Race, Gender and Environmentalism: The Atypical Values and Beliefs of White Men.” Race, Gender, & Class 9(2):112–30.

Kato, Yuki. 2013. “Not Just the Price of Food: Challenges of an Urban Agriculture Organization in Engaging Local Residents.” Sociological Inquiry 83(3):369–91.

Kato, Yuki, Catarina Passidomo, and Daina Harvey. 2014. “Political Gardening in a Post-disaster City: Lessons from New Orleans.” Urban Studies 51(9):1833–49.

Kearns, Ade, Rosemary Hiscock, Anne Ellaway, and Sally MacIntyre. 2000. “Beyond Four Walls: The Psycho-Social Benefits of Home: Evidence from West Central Scotland.” Housing Studies 15(3):387–410.

Kelly, Erin N., David W. Schindler, Peter V Hodson, Jeffrey W. Short, Roseanna Radmanovich, and Charlene C. Nielsen. 2010. “Oil Sands Development Contributes Elements Toxic at Low Concentrations to the Athabasca River and Its Tributaries.” Proceedings of the National Academy of Sciences 107(37):16178–83.

Kennedy, Emily Huddart, and Julie Knec. 2018. “Reinterpreting the Gender Gap in Household Pro-Environmental Behaviour.” Environmental Sociology 4(3):299–310.

Kennedy, Emily Huddart, Harvey Krahn, and Naomi T. Krogman. 2013a. “Are We Counting What Counts? A Closer Look at Environmental Concern, Pro-environmental Behaviour, and Carbon Footprint.” Local Environment 20(2):220–36.

Kennedy, Emily Huddart, Harvey Krahn, and Naomi T. Krogman. 2013b. “Downshifting: An Exploration of Motivations, Quality of Life, and Environmental Practices.” Sociological Forum 28(4):764–83.

Kennedy, Emily Huddart, Harvey Krahn, and Naomi T. Krogman. 2014. “Egregious Emitters: Disproportionality in Household Carbon Footprints.” Environment and Behavior 46(5):535–55.

Kent, Jennifer. 2016. “Ontological Security and Private Car Use in Sydney, Australia.” Sociological Research Online 21(2):1–14.

Klein, Naomi. 2007. The Shock Doctrine. Toronto: Knopf Canada.

Klein, Naomi. 2014. This Changes Everything: Capitalism vs. the Climate. New York: Simon & Schuster.

Klinenberg, Eric, Malcolm Araos, and Liz Koslov. 2020. “Sociology and the Climate Crisis.” Annual Review of Sociology 46:1–21.

Knight, Kyle W., and Benjamin L. Messer. 2012. “Environmental Concern in Cross-National Perspective: The Effects of Affluence, Environmental Degradation, and World Society.” Social Science Quarterly 93(2):521–37.

Landry, Nicholas, Robert Gifford, Taciano L. Milfont, Andrew Weeks, and Steven Arnokey. 2018. “Learned Helplessness Moderates the Relationship between Environmental Concern and Behavior.” Journal of Environmental Psychology 55:18–22.

Larson, Lincoln R., Richard C. Stedman, Caren B. Cooper, and Daniel J. Decker. 2015. “Understanding the Multi-dimensional Structure of Pro-environmental Behavior.” Journal of Environmental Psychology 43:112–24.

Leombruni, Lisa V. 2015. “How You Talk about Climate Change Matters: A Communication Network Perspective on Epistemic Skepticism and Belief Strength.” Global Environmental Change 35:148–61.

Lewin, Philip. 2019. “‘I Just Keep My Mouth Shut’: The Demobilization of Environmental Protest in Central Appalachia.” Social Currents 6(6):534–52.

Lujala, Päivi, Haakon Lein, and Jan Ketil Rød. 2015. “Climate Change, Natural Hazards, and Risk Perception: The Role of Proximity and Personal Experience.” Local Environment 20(4):489–509.

Magdoff, Fred, and John Bellamy Foster. 2011. What Every Environmentalist Needs to Know about Capitalism. New York: Monthly Review Press.

Malin, Stephanie A. 2015. The Price of Nuclear Power: Uranium Communities and Environmental Justice. New Brunswick, NJ: Rutgers University Press.

Markle, Gail L. 2013. “Pro-environmental Behavior: Does It Matter How It’s Measured? Development and Validation of the Pro-environmental Behavior Scale (PEBS).” Human Ecology 41(6):905–14.

Marshall, Brent K. 2004. “Gender, Race, and Perceived Environmental Risk: The ‘White Male’ Effect in Cancer Alley, L.A.” Sociological Spectrum 24(4):453–78.

Marshall, Brent K., J. Steven Picou, and Christine A. Bevc. 2005. “Ecological Disaster as Contextual Transformation: Environmental Values in a Renewable Resource Community.” Environment and Behavior 37(5):706–28.

Maxwell, Joseph A. 2005. Qualitative Research Design: An Interactive Approach. Thousand Oaks, CA: Sage.
Mayer, Adam, and E. Keith Smith. 2017. “Rethinking Economic Conditions and Environmental Attitudes: Macroeconomic Effects, Individual Experiences, and Subjectivity.” Social Currents 4(4):342–59.

McCright, Aaron M., and Riley E. Dunlap. 2011. “Cool Dudes: The Denial of Climate Change among Conservative White Males in the United States.” Global Environmental Change 21(4):1163–72.

McCright, Aaron M., and Riley E. Dunlap. 2013. “Bringing Ideology In: The Conservative White Male Effect on Worry about Environmental Problems in the USA.” Journal of Risk Research 16(2):211–26.

McCright, Aaron M., and Chenyang Xiao. 2014. “Gender and Environmental Concern Insights from Recent Work and for Future Research.” Society & Natural Resources 27(10):1109–13.

McDonald-Harker, Caroline, Emilie Bassi, and Timothy J. Haney. Forthcoming. “We Need to Do Something about This”: Children and Youth’s Post-disaster Views on Climate Change and Environmental Crisis.” Sociological Inquiry.

Meyer, Robert, and Howard Kunreuther. 2017. The Ostrich Paradox: Why We Underprepare for Disasters. Philadelphia: Wharton Digital Press.

Miles, Matthew B., and A. Michael Huberman. 1994. Qualitative Data Analysis: An Expanded Sourcebook. Thousand Oaks, CA: Sage.

Milnes, Travis, and Timothy J. Haney. 2017. “There’s Always Winners and Losers’: Traditional Masculinity, Resource Dependence and Post-disaster Environmental Complacency.” Environmental Sociology 3(3):260–73.

Morioka, Rika. 2014. “Gender Difference in the Health Risk Perception of Radiation from Fukushima in Japan: The Role of Hegemonic Masculinity.” Social Science and Medicine 107:105–12.

Mueller, J. Tom, and Lauren E. Mullenbach. 2018. “Looking for a White Male Effect in Generation Z: Race, Gender, and Political Effects on Environmental Concern and Ambivalence.” Society and Natural Resources 31(8):925–41.

Nagel, Joane. 2015. Gender and Climate Change: Impacts, Science, Policy. New York: Routledge.

Napier, Jaime L., Anesu N. Mandisodza, Susan M. Andersen, and John T. Jost. 2006. “System Justification in Responding to the Poor and Displaced in the Aftermath of Hurricane Katrina.” Analyses of Social Issues and Public Policy 6(1):57–73.

Nocera, Silvio, and Federico Cavallaro. 2011. “Policy Effectiveness for Containing CO₂ Emissions in Transportation.” Procedia—Social and Behavioral Sciences 20:703–13.

Norgaard, Kari. 2011. Living in Denial: Climate Change, Emotions, and Everyday Life. Cambridge: MIT Press.

Passidomo, Catarina. 2014. “Whose Right to (Farm) the City? Race and Food Justice Activism in Post-Katrina New Orleans.” Agriculture and Human Values 31(3):385–96.

Phillips, Brenda. 1997. “Qualitative Methods and Disaster Research.” International Journal of Mass Emergencies and Disasters 15(1):179–95.

Phillips, Brenda D. 2014. Qualitative Disaster Research. New York: Oxford University Press.

Picou, J. Steven, Brent K. Marshall, and Duane A. Gill. 2004. “Disaster, Litigation, and the Corrosive Community.” Social Forces 82(4):1493–1522.

Reid, Karen, and Ruth Beilin. 2015. “Making the Landscape ‘Home’: Narratives of Bushfire and Place in Australia.” Geoforum 58:95–103.

Rhead, Rebecca, Mark Elliot, and Paul Upham. 2018. “Using Latent Class Analysis to Produce a Typology of Environmental Concern in the UK.” Social Science Research 74(June):210–22.

Robbins, Paul. 2007. Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are. Philadelphia: Temple University Press.

Rudolph, Max. 2019. “12th Annual Survey of Emerging Risks: Key Findings.” Retrieved January 31, 2021. https://www.soa.org/globalassets/assets/files/resources/research-report/2019/12th-emerging-risk-survey.pdf.

Seannell, Leila, and Robert Gifford. 2013. “Personally Relevant Climate Change: The Role of Place Attachment and Local versus Global Message Framing in Engagement.” Environment and Behavior 45(1):60–85.

Silver, Amber, and Jason Gnek-Martin. 2015. “Now We Understand What Community Really Means’: Reconceptualizing the Role of Sense of Place in the Disaster Recovery Process.” Journal of Environmental Psychology 42:32–41.

Smith, Dorothy E. 1974. “Women’s Perspective as a Radical Critique of Sociology.” Sociological Inquiry 44(1):7–13.

Smith, Dorothy E. 1987. The Everyday World as Problematic: A Feminist Sociology. Boston: Northeastern University Press.

Solarin, Sakiru Adebola. 2019. “Convergence in CO₂ Emissions, Carbon Footprint and Ecological Footprint: Evidence from OECD Countries.” Environmental Science and Pollution Research 26:6167–81.

Sousa, Cindy A., Susan Kemp, and Mona El-Zuhairi. 2014. “Dwelling within Political Violence: Palestinian Women’s Narratives of Home, Mental Health, and Resilience.” Health and Place 30:205–14.

Spence, A., W. Poortinga, C. Butler, and N. F. Pidgeon. 2011. “Perceptions of Climate Change and Willingness to Save Energy Related to Flood Experience.” Nature Climate Change 1:46–49.

Sundström, Aksel, and Aaron M. McCright. 2014. “Gender Differences in Environmental Concern among Swedish Citizens and Politicians.” Environmental Politics 23(6):1–14.

Takahashi, Bruno, and Theresa Selfa. 2015. “Predictors of Pro-environmental Behavior in Rural American Communities.” Environment and Behavior 47(8):856–76.

Tam, Kim Pong, and Hoi Wing Chan. 2017. “Environmental Concern Has a Weaker Association with Pro-environmental Behavior in Some Societies Than Others: A Cross-Cultural Psychology Perspective.” Journal of Environmental Psychology 53:213–23.

Tanner, Alexa, and Joseph Árvai. 2018. “Perceptions of Risk and Vulnerability Following Exposure to a Major Natural Disaster: The Calgary Flood of 2013.” Risk Analysis 38(3):548–61.

Thistlethwaite, Jason, Daniel Henstra, Craig Brown, and Daniel Scott. 2018. “How Flood Experience and Risk Perception Influences Protective Actions and Behaviours among Canadian Homeowners.” Environmental Management 61(2):197–208.
Thistlethwaite, Jason, Daniel Henstra, Shawna Peddle, and Daniel Scott. 2017. “Canadian Voices on Changing Flood Risk: Findings from a National Survey.” Waterloo, ON, Canada: University of Waterloo Faculty of Environment.

Tidball, Keith G. 2012. “Urgent Biophilia: Human-Nature Interactions and Biological Attractions in Disaster Resilience.” Ecology and Society 17(2):5–23.

Trumbo, Craig, Michelle A. Meyer, Holly Marlatt, Lori Peek, and Bridget Morrissey. 2014. “An Assessment of Change in Risk Perception and Optimistic Bias for Hurricanes Among Gulf Coast Residents.” Risk Analysis 34(6):1013–24.

Truong, Duyen, Debra J. Davidson, and John R. Parkins. 2019. “The Extractive Industries and Society Context Matters: Fracking Attitudes, Knowledge and Trust in Three Communities in Alberta, Canada.” Extractive Industries and Society 6(4):1325–32.

UNDRR (United Nations Office for Disaster Risk Reduction). 2019. “Global Assessment Report on Disaster Risk—GAR19.” Geneva, Switzerland: United Nations.

Veblen, Thorstein. 1899. The Theory of the Leisure Class: An Economic Study of Institutions. New York: Macmillan.

Walton, Tobin, and D. Mark Austin. 2011. “Pro-environmental Behavior in an Urban Social Structural Context.” Sociological Spectrum 31(3):260–87.

Warren, Carol A. B., and Tracy Xavia Karner. 2010. Discovering Qualitative Methods: Field Research, Interviews, and Analysis. New York: Oxford University Press.

Weymann, Martin, and Rainer Egloff. 2019. “SONAR 2019: New Emerging Risk Insights.” Swiss Re Institute. Retrieved January 31, 2021. https://www.swissre.com/institute/research/sonar/sonar2019.html.

Whaley, Arthur L. 2009. “Trauma among Survivors of Hurricane Katrina: Considerations and Recommendations for Mental Health Care.” Journal of Loss and Trauma 14(6): 459–76.

Whitmarsh, Lorraine, and Saffron O’Neill. 2010. “Green Identity, Green Living? The Role of Pro-environmental Self-Identity in Determining Consistency across Diverse Pro-environmental Behaviours.” Journal of Environmental Psychology 30(3):305–14.

Wilson, Jeffrey, Peter Tyedmers, and Jamie E. L. Spinney. 2013. “An Exploration of the Relationship between Socioeconomic and Well-Being Variables and Household Greenhouse Gas Emissions.” Journal of Industrial Ecology 17(6):880–91.

Zaretsky, Eli. 2002. “Trauma and Dereification: September 11 and the Problem of Ontological Security.” Constellations 9(1):98–105.

Zerubavel, Eviatar. 2006. The Elephant in the Room: Silence and Denial in Everyday Life. New York: Oxford University Press.

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