



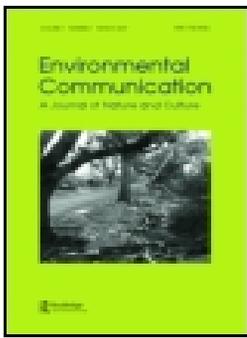
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# Graphs of grief and other green feelings: the uses of affect in the study of environmental communication

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## ABSTRACT

How can theories of affect and felt emotions be useful in studying the communication of environmental crises? Beginning from tears spilt over a graph of transgressed planetary boundaries published in an academic paper, this article explores the presentation in graphic visual forms of affective imagery and a growing sophistication amongst scientists, policymakers and activist communicators in the visualization of information, data and stories employed to carry the often difficult and complex messages of current earth systems crises. Critically, this article attends to the “emotion work” of such images. Taking a lead from cultural sociology and attempting to elucidate the relationship between societies under pressure and its choice of texts, this article considers the environmental documentary *Cowspiracy* [Anderson, K., & Kuhn, K. (2014). *Cowspiracy*. San Francisco, CA: AUM Films & First Spark Media.] to ask questions of affect’s relation to expressions of the earth systems crisis, which is also a crisis of culture.

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## Introduction

In 2011 and for the first time, I cried over an academic paper. I had just read Rockström et al.’s (2009a) article that attempts to quantify “safe limits” for our major earth systems. Rockström et al. propose nine planetary boundaries against which measurements can be made in communicating science to policymakers and the public in taking action to halt environmental catastrophe. As Barry (2014, p. 542) notes, Rockström et al.’s article has become pivotal to the development of a visual language for approaches to the current earth systems crisis. The UN adopted these nine boundaries for its “draft zero” document for the UN Rio+20 Earth Summit (United Nations, 2012). The boundaries have stood since as the basis for much contemporary work on the study of the Anthropocene (Barry, 2014; Steffen et al., 2011; Trevors, Stavros, & Saier, 2010). The moment I cried was on looking at a single graph in the original paper (Figure 1).

The loss of the world’s biodiversity struck me as incalculable—exceeding not only the safe limit at which the planet can self-regulate but also the very outer limit (the edge of the page) of something not mathematical but symbolic. My response fell into the category that Leiserowitz (2006, p. 55) has identified of those most concerned with climate change, moved by two key factors: (a) the suffering of a global humanity far removed from one’s own everyday routines and (b) the threat to nonhuman nature. As Leiserowitz found “holistic negative affect was the strongest predictor of global warming risk perception” (p. 63); and this was closely associated with other experiential factors, especially the visually mediated cues of climate change such as polar bears on melting ice. As Smith and Joffe (2013, p. 16) argue, members of the public first engage with climate change visually. Seeing the

# Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009

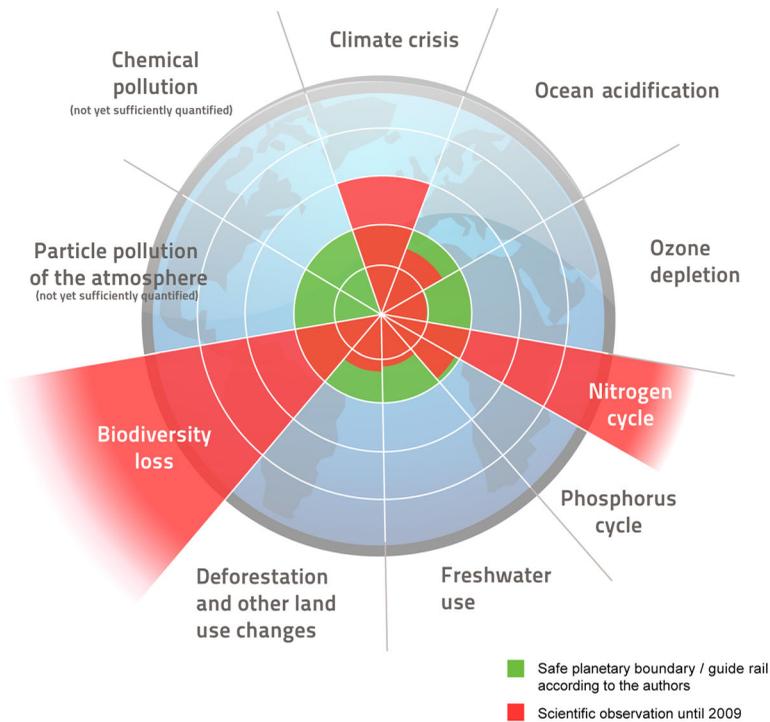


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**Figure 1.** Nine Planetary Boundaries. Source: Rockström et al., 2009a

rate of biodiversity loss in this format brought me to tears. I sat with an academic paper on my lap and I cried.

Are people stimulated to make behavioral changes or support policy interventions when affected by negative imagery, understanding that, according to Steffen et al. (2011), such communication exposes the diminishment of planetary systems? Perhaps not. As Leiserowitz (2005, 2006) finds, being *affected* by such imagery has not translated into environmentally responsible behavior where either climate change or other major earth systems crises are concerned. Factors including previously existing value commitments (Kahan, Jenkins-Smith, & Braman, 2011) have proven to be stronger predictors of behavior. Affective triggers such as fear have been shown to be counter-productive to inducing pro-environmental behavior change (Moser & Dilling, 2010; O'Neill & Nicholson-Cole, 2009). As Leiserowitz (2006, pp. 62–63) concludes, the public has “not fully confronted the contradiction between their strong support for greenhouse gas emission reductions and opposition to selected policies that would directly discourage fossil fuel use by consumers.”

So what use tears? In James Elkins' *Pictures and Tears*, a study of what makes us cry as we look at art, the author concludes that “crying is on the continuum of normal human responses to the world [ . . . ] We think while we cry, and we feel while we think” (2004, p. 213). For Elkins, crying suggests we are letting ourselves be “a little less consistently rational” (Elkins, 2004). However, when the image that moves us to tears is one that communicates the inordinate loss of life on earth it is, I argue, a wholly proportionate response. This is, as Höjjer (2010, p. 3) puts it, exemplary of how “emotions and social cognitions are intrinsically interlinked, and that emotions are of critical importance for all aspects of social cognition.” The authors of Rockström et al. (2009a) did not configure

the image to affect me in this way, no doubt. And yet, as Grosz (2009, p. 87) suggests, the artistic is not confined to those objects found in galleries, but that “art” in its Darwinian sense is an affective energy where “properties and qualities take on the task of representing the future, of preceding and summoning up sensations to come, a people to come, worlds or universes to come.”

The presentation in visual form of crises information contributes to a growing sophistication, perhaps even artistry, in the visualization of information, data and stories employed to carry the often difficult and complex communication messages of current earth systems crises (Doyle, 2011). This trend is both within science and academia and in the move to then take that science to a general public audience. Three years later and I found myself at the 2014 Animal Rights Conference in Los Angeles, watching the premier of the documentary film *Cowspiracy* (Anderson & Kuhn, 2014). This film played to its audience in establishing a problem—climate change—and an intrepid activist/journalist’s attempts to make individual behavioral changes, only for him to discover that the most impactful changes would be to move toward a plant-based diet. The 2006 UNFAO Report *Live-stock’s Long Shadow* and the 2009 World Watch Report on animal agriculture (FAO-UN, 2006; Goodland & Anhang, 2009), both of which feature in *Cowspiracy*, suggest animal agriculture is responsible for anywhere between 18% and 51% of greenhouse gas emissions, even while it remains absent from nearly all major international environmental campaigns (Anderson & Kuhn, 2014).

As I watched *Cowspiracy* I found myself again in tears, but this time of a hopeful flavor. The film’s framing (an uplifting, action-oriented message and promoting self-efficacy in bringing about change) left me feeling a different emotion: *optimism*. As well as supporting self-efficacy as important for action (Breakwell, 1986), the film affirmed rather than threatened my sense of self and basic worldview; such a strategy has been shown to “create greater openness to risk information” (Kahan & Braman, 2006). The film employs a positive affective register—or what Leiserowitz (2006, p. 48) calls an “affect heuristic—an orienting mechanism that allows people to navigate quickly and efficiently through a complex, uncertain and sometimes dangerous world, by drawing on positive and negative feelings associated with particular risks.” As the credits rolled, I cried once again.

My tears might be useful as a starting point for a broader interrogation of effective public environmental communication through the lens of emotional response and, in particular, cultural and sociological theories of how affect *works*. I use the experiences raised here to argue that theory concerning the cultural, political and embodied natures of affect are not yet fully explored in the research on public environmental and science communication. Beginning with my hopeful and grieving experiences in relation to the visual communication of earth systems crises and threats to nature and biodiversity loss, this article brings together scholarship that allows the scholar’s affective states into the study (e.g. Cvetkovich, 2012) with current research in environmental communication. Such gathering together aids us in exploring the affective and emotional qualities of visual and graphic forms of communication used to express humanity’s relation to the planet, which is also a crisis of culture. The article explores how these theories can be utilized as part of the methodological tool kit for science communication study. Finally, I ask what can a deeper and broader understanding of affect offer public environmental campaigners and environmental communications researchers. But first I look at how emotions are currently studied in contemporary environmental communications, especially around climate change.

### **Existing approaches to the emotions in public environmental communication**

There is a broad body of research exploring different emotions as they are found in public environmental campaigns (e.g. Moser & Dilling, 2010; Norgaard, 2011; O’Neill & Nicholson-Cole, 2009), how emotions are elicited by different sides of environmental and, in particular, climate change debates (e.g. McCright, Dunlap, & Xiao, 2013; Olausson, 2011) and the outcomes such emotional atmospheres can encourage or obstruct (e.g. Ferguson & Branscombe, 2009; Murtagh, Gatersleben, & Uzzell, 2012).

Much of this work has so far engaged with individual values and the ways in which different emotional triggers might interact with previously held motivations (Wolf, Brown, & Conway, 2009). For example, Ferguson and Branscombe (2009, p. 135) found that: “Collective guilt for Americans’ greenhouse emissions was the only reliable mediator of the effect of beliefs about global warming on willingness to engage in mitigation behaviors.” They went further to suggest that stimulating guilty feelings regarding one’s group’s carbon footprint is a useful tool leading to mitigating climate change activity (2009, p. 141). However, for Moser and Dilling (2010, p. 4) “Fear appeals [...] frequently result in denial, numbing, and apathy, i.e. reactions that control the unpleasant experience of fear rather than the actual threat.” Such fear appeals undermine people’s understanding of their efficacy in responding to the threat. For Roser-Renouf, Maibach, Leiserowitz, and Zhao (2014, p. 174) “climate communicators should work to build a sense of efficacy among their audiences.” They found feelings of apathy and distrust toward political activism more generally, as a means to bring about change, were barriers to action, and advocate that “supporting public beliefs about the effectiveness and feasibility of activism is also central” (Roser-Renouf et al., 2014, p. 177).

Whitmarsh (2009, p. 21) has explored the divergences in actions prescribed by policymakers and those actually taken by the general public. She found a large gap between the two, and that actions taken by the public to conserve energy were done so, often, for reasons unconnected to the environment (e.g. to save money). For Howell also (2013, p. 288), the motivations for “environmentally responsible behaviour” (as opposed to “pro-environmental behaviour”) were myriad, and often not connected to environmental motivations at all. Many of the respondents in her research were expressing “compassion for those affected by climate change impacts” rather than because of the impacts of climate change on themselves. As she continues: “although we cannot be confident of their efficacy, altruistically-based appeals may have more effect than ecocentric ones” (Howell, 2013.).

Implicitly noted in both Whitmarsh and Howell are the emotional dimensions of the behavioral responses to climate change (e.g. compassion and altruism) although these are typically un(der)theorized. More complexly organized than the study of specific emotional appeals in environmental communication, a major trend in the scientific study of science communication has been to explore what Kahan et al. (2012) name as “cultural cognition,” where scientific information is filtered through an individual’s a priori cultural beliefs, rendering many assumptions of how people acknowledge and assimilate knowledge about risk redundant. According to Kahan and Braman (2006, p. 148), “culture is prior to facts in the cognitive sense that what citizens believe about the empirical consequences of [certain actions or] policies derives from their cultural worldviews.” As Moser and Dilling (2010, p. 6) phrase it,

Incoming information—however framed—may be rejected upon very quick (intuitive) judgment if it evokes some kind of threat to the listener’s sense of self, i.e. if it challenges his or her deeply held beliefs or those of the groups s/he most identifies with.

Or as Akerlof, Maibach, Fitzgerald, Ceden, and Neuman (2013, p. 88) state, “individuals’ perceptions of risk are driven more strongly by the beliefs of their group than they are by risk information.”

One key example of cultural cognition at work is in the widely held sense that people will act more quickly and consistently on climate change if only they understand the science better. This has been labeled the “information deficit position.” However, as Kahan et al. (2012) argue, the model has not been proven; in fact, it is more likely that this model has been shown to have the *opposite* effect. As Kahan (2014, p. 2) continues: “On the whole, the most scientifically literate and numerate subjects were slightly *less* likely, not more, to see climate change as a serious threat than the least scientifically literate and numerate ones.” The more reasonable analysis, they argue, is that “greater scientific literacy and numeracy were associated with greater *cultural polarization*” (Kahan, 2014). Their suggestion is that the evidence exhibits a conflict between two levels of *rationality*:

the individual level, which is characterized by the citizens’ effective use of their knowledge and reasoning capacities to form risk perceptions that express their cultural commitments; and the collective level, which is

characterized by citizens' failure to converge on the best available scientific evidence on how to promote their common welfare. (Kahan, 2014)

There is here a cognitive bias; while not dismissing completely the emotional and affective dimensions of the behavior under study, this work remains largely focused on the cognitive "rationality" of individuals' behavior choices and responses. And as Moser and Dilling (2010, p. 1) argue, communication "involves a cognitive, an affective, and a behavioral dimension."

Another emerging trend in research begins to weave the study of these three dimensions more closely together to better explore how "identity processes may determine how people process social representations of climate change, and that they mediate the link between representations and environmental behaviour" (Jaspal, Nerlich, & Cinnirella, 2014, p. 111). There have been calls for a more informed identity-based approach to climate change (e.g. Crompton & Kasser, 2010; Murtagh et al., 2012). For these researchers, working within the social sciences and employing the theory of social representations and Identity Process Theory (Breakwell, 1986, 2010; Jaspal & Breakwell, 2014; Moscovici, 2000), when it comes to understanding individual and social group response to climate change then "the missing link between social representations and social action may be identity" (Jaspal et al., 2014, p. 121).

There are two areas on which this work most firmly engages with emotions and affect. The first is around threatened identities. Identity Process Theory postulates that people "will behave in ways that restore appropriate levels of particular identity principles when they are threatened" (Jaspal et al., 2014, p. 125). These identity principles include "(i) self-continuity and group-continuity over time (*continuity*); (ii) uniqueness and differentiation from relevant others (*distinctiveness*); (iii) competence and control over their lives (*self-efficacy*) and (iv) feelings of personal worth (*self-esteem*)" (Jaspal et al., 2014, p. 118). Rather than focusing on the emotional comportment of the risk communication, they argue: "it is necessary for the researcher to examine the ways in which particular behaviours (e.g. use of one's car; the consumption of meat) might impinge upon identity processes in specific socio-cultural settings" (Jaspal et al., 2014, p. 123). This is especially applicable to enforced changes such as government policy, which "could threaten feelings of distinctiveness and self-esteem, particularly if the enhancement of these principles is contingent upon the maintenance of existing practices" (Jaspal et al., 2014, p. 127). Behavior change that interferes with one's daily life convenience is likely to be construed as particularly threatening (Bord, O'Connor, & Fisher, 2000).

The second area in which social representations theory and identity studies have engaged so far most fully with the issue of emotions and affect in environmental communication is around imagery. Smith and Joffe (2009) in a study of the British press have already emphasized visual information's ability to arouse emotions in relation to environmental issues and especially climate change. As Moser and Dilling (2010, p. 3) suggest, because of the "lack of direct experience" of climate change, it makes the issue "fundamentally a problem that requires signaling, illustrating, and explaining by those who have expert knowledge to those who don't." However, as Howell (2013, p. 287) explains, "the images associated with 'climate change' were generally negative, and [...] tended to focus on impacts rather than causes or solutions." For Höijer (2010, p. 3) climate change has become known to us visually through the "communicative processes by which a new phenomenon is attached to well-known positive or negative emotions, for example fear or hope." Environmental communication studies has already developed the concept of "affective image analysis—a structured form of word association and content analysis—as an invaluable method to investigate the relationship between affect, imagery and perceived risk" (Leiserowitz, 2006, p. 48). Here the concept of the "image" refers to more than just visually based mental representations. Affective images thus "include sights, sounds, smells, ideas, and words, to which positive and negative affect or feeling states have become attached through learning and experience" (Leiserowitz, 2006, p. 48).

However, even within this developed field of study of identity processes, cultural cognitions and environmental communication, the actual ways in which affect works in and through social systems remains under-theorized and under-employed as a means to further understand how environmental

communication can lead to behavioral changes, both positive (pro-environmental) and negative (threatened and obstructive). As such, I now move on to explore that theory.

## The emergence of public feelings

In the last two decades, the terms “public feelings” or “public sentiments” have been put into circulation by cultural theorists “to challenge the idea that feelings, emotions, or affects properly and only belong to the domain of private life and to the intimacies of family, love, and friendship” (Cvetkovich & Pellegrini, 2003, p. 1). These academic-activists help focus critical attention on the ways in which affects saturate politics to expose, for example, the political’s employment in justifying neoliberal aims. These include, as means of illustration, the use of national sentimentality in the “war on terror” (Berlant, 2007). These scholars argue that feelings are too often mobilized and circulated in public spheres in ways that support normalizing pathologies that degrade and refuse non-dominant reproductions of life. As Cvetkovich (2007, p. 461) says, “our interest in everyday life, in how global politics and history manifest themselves at the level of lived affective experience” is to unpick the relationship between politics, history and ordinary lives, because “private or personal matters are in fact central to political life” (Cvetkovich, 2007). According to Berlant (2012, p. 226), public spheres are “always affect worlds.” The critique of many scholars is that when feelings are restricted to private life they are redacted of political agency (Rice, 2012). A focus on “public feelings” brings out ordinary affects from the domains of family and therapy to reveal how such feelings are integral to what Stewart (2007, p. 87) calls that “something huge and impersonal [that] runs through things” including in the labor of academic work.

It is important to be precise in exploring this relationship between ordinary, private emotions and their mobilization in a public sphere, not least to avoid reasserting them as opposites in the “private” versus “public” binarism which allows the hegemonic dominance of public (male) modes of life over private and feminine experiences (Staiger, Cvetkovich, & Reynolds, 2010). For definitions, I use the glossary provided by Flatley (2008, p. 15) for whom affects are “amplifying, dampening, or otherwise modifying” physiological changes that “serve the valuable function of focusing our attention on something very specific—such as a danger, a loss, or the presence or absence of a smile on the face of an interlocutor.” In contrast, emotions are “the result of the inevitable interaction of affects with thoughts, ideas, beliefs, habits, instincts, and other affects. If affects are not reducible, emotions are, and it is emotions that vary from context to context, person to person” (Flatley, 2008, p. 16). In addition, feelings are *processes by which we feel something*, and which can be individual but which are, in the context of social identities and movements, structural to cultures and societies. This is how Flatley and others (e.g. Cvetkovich, 2012) have employed Raymond Williams’ concept of a “structure of feeling.” As Flatley (2008, p. 26) puts it: “When certain objects produce a certain set of affects in certain contexts for certain groups of people—that is a structure of feeling.” “Public feelings” are one set of structures explored by cultural theorists, particularly from feminist, queer and postcolonial positions, who have turned to affect, emotion and feeling to ask questions of power in relation to embodiment, to expose the “good life” fantasies of neoliberalism, and find alternatives.

These critics have brought affect into discussions of social and cultural phenomena with the result that “[t]he theoretical language of emotions, feelings and affect is now broadly used in the field of social and cultural studies [with] the understanding of the social and the political as *passionate and affective*” (Kunstman, 2012, p. 4). The aim of attending to feelings in these public spheres then, as Cvetkovich (2003, p. 11) suggests, is to develop a critical program that destabilizes the understanding of politics as free from private feelings, to “forge methodologies for the documentation and examination of the structures of affect that constitute cultural experience and serve as the foundation for public cultures.” What sets these works apart from an application of merely psychoanalytic theory is a return to the body’s role in forging productive starting points for the humanities’ intervention in what Stewart (2011, p. 445) calls “worlding” and the ways in which affect is interwoven with

the political. Public feelings can contribute to and maintain normative values within a culture; but they are *also* emotions that can be circulated by those same or alternative systems to challenge that culture. Public feelings, then, are “neither inherently subversive nor inherently conservative. Rather [...] we must ask into the instant and consider ‘who is utilizing it, how it is deployed, and where its effects are concentrated’” (Cvetkovich & Pellegrini, 2003, p. 1).

Much of the focus of these studies has been on the contemporary present of neoliberalism, tracked by critics such as Earl Gammon to the post-Fordist crises of the 1960s and 1970s and the rise of counter-publics through feminism and the civil rights movement. The genesis of neoliberalism is also a “psychogenesis” in that for Gammon (2013, p. 512) “corresponding to the rise of neoliberalism is a distinct affective configuration of the self.” The machismo of affective neoliberalism is not an accident but a psychosocial response from within patriarchal cultures to the threats from non-dominant groups, and to which responses in “all aspects of sociality, including within the economic sphere [became] overdetermined by affect, that is, by anxiety and aggression” (Gammon, 2013). Our critiques, he argues, must be grounded in a conception of neoliberalism as “an affective technology, a technology of both the self and of governance in Foucauldian terms” (Gammon, 2013, p. 513). For Reber (2012), this conception marks the epistemic shift taking place from rationality to feeling, where we no longer privilege sources and processes of knowledge emanating from the head or mind—logical thought, *logos*—but are coming to allow for the primacy of bodily knowledge, of the somatic and pre-rational, for organizing Western cultures’ processes of living—for example, my tears over the Rockström graph and in the cinema hall watching *Cowspiracy*. She calls this a “headless capitalism” (Reber, 2012, p. 62) and it is linked to the essential need to reimagine the free-market and globalization as systems that are not damaging to humans, nonhumans and the ecologies on which we depend. Taking affect further along a political path, she suggests we are witnessing “the full-blown emergence of an episteme inherently bounded by affect” (Reber, 2012, p. 68).

Reber argues that although a shift is happening, we do not yet know fully how to step outside of the epistemology of rationalistic thought. We are too familiar with the ideas of capitalism because they are “epistemically consonant with the dominant rationalist paradigm of the modern colonialism” (Reber, 2012, p. 91). For the critical sociologist Eva Illouz, it is a specifically *textual* epistemology that encountered affect within the body (e.g. in hysteria) but that rationalized it into the economic sphere (preparedness for work and home-making) through its ability to be replicated and circulated through texts, and so brought about:

“the emotionalisation of economic conduct”—“emotional capitalism.” In emotional capitalism emotional and economic discourses mutually shape one another so that affect is made an essential aspect of economic behaviour, and emotional life, especially that of the middle classes, follows the logic of economic relations and exchange. (Illouz, 2007, p. 60)

What Illouz terms “emotional capitalism” as an overarching set of cultural resources that reside in the practices and texts of Western culture. It is at its most powerful when it attaches meaning to the individual self, and through this influences actions and behaviors by shaping worldviews from which people develop strategies for living (Illouz, 2007, p. 57). When these strategies are constrained by a culture that accepts some modes of life and rejects others then we begin to live in a one-sided world where capitalism produces innumerable imbalances even while it is, through neoliberalism, “discursively cloaked in equilibrium” (Reber, 2012, p. 84). For Reber (2012, p. 92), it is a case of first recognizing affect “as an independent epistemic modality—a full-fledged mechanism for the representation of knowledge of self and world.” When we have learnt how to step outside of capitalist epistemologies of infinite growth then we will be able to counter it.

In a similar vein, exploring the catastrophe at the Fukushima nuclear plant, Massumi called for “an alter-politics of affect” (Massumi, 2011) to not think but *feel* our way toward a new clime of organization in tackling ecological crises. Massumi was critiquing the mass media’s deployment of affect in legitimating what Naomi Klein has called “disaster capitalism” (Klein, 2007). As with Illouz’s “emotional capitalism” and Gammon’s “affective technology,” Massumi sees affect as

inseparable from the exercise of a capitalist power that is both the cause and beneficiary of ecological crises. Of course, affect is not new to critical theories of modernity; Marxism, for example, is structured around feelings of alienation. For Massumi “an ecological alter-politics must also be an alter-politics of affect”: one that would counter the powerful mass-archive of political and media elites. Perhaps the most influential aspect of affect theory is this reclamation of individual agency from a limited view of self-transformation through consumer practices, to instead make probable a transformation of the social through movements.

Massumi rightly identifies Fukushima as a catastrophic event with global reach. But it is important to go beyond the “event” and respond to what happens in the everyday. Cvetkovich (2003, p. 44) argues “the feeling of life under capitalism may manifest as much in the dull drama of everyday life as in the cataclysmic or punctual events [...] the affective nature of everyday experiences of systemic violence may only sometimes be manifest as trauma”; we do not always register that low-level fear and fatigue of living under capitalism. This is the affective register of climate change, also, and environmental threat. As Jaspal et al. (2014, p. 127) argue,

It seems more likely that individuals will respond more favorably to recommendations concerning behaviour change when the recommended change is framed and perceived as being less disruptive to everyday lifestyles. Otherwise, a threat to continuity is likely to activate deflection strategies which in turn block any perceived need for change.

This is perhaps (but not only) because environmental catastrophe is often too large to fit the zoom lens, and a reason why, as Scannell and Gifford (2013) argue, climate change can and must become personally salient for behavior change to take place within the local; or, for Devine-Wright (2013) in making the *global* as salient as the *local*. Otherwise, climate change remains one of Morton’s hyper-objects (2013) that we ourselves are inside. But it is exactly these “feelings” we have about climate change that have been shown to affect how we will respond to the threat posed by the crisis, whether that be fear (O’Neill & Nicholson-Cole, 2009; Reser, Morrissey, & Ellul, 2011), guilt (Ferguson & Branscombe, 2009) or more positive emotions such as hope (Myers, Nisbet, Maibach, & Leiserowitz, 2012), belonging (Devine-Wright, 2013) and belief in one’s ability to bring about change (Roser-Renouf et al., 2014). In particular, how one *feels* about threats to one’s personal or social group membership identities will significantly impact on responses to climate change. For example, Murtagh et al. (2012) found that threats to self-identity may contribute to resistance to change in how people see their sense of identity in relation to travel (holidays, visiting relatives and commuting). This fuller exploration of theories of affect can only further the scholarly engagement toward an understanding of how identity, emotions and cognition are interrelated in response to environmental risk.

## A graph of grief revisited

But, of course, it is not often as easy as that. So how can affect theory help us unpick concepts and categories around threats to environments, especially from climate change impacts, that at first can seem helpful or even essential? Let us return to the graph that propagated my tears.

The orange area is what Rockström et al. (2009b, p. 32) have estimated as “the safe space for human development if we want to be sure of avoiding major human-induced environmental change on a global scale.” But as the authors put it: “For biodiversity loss, the estimated current boundary level of [more than] 100 extinctions per million species-years exceeds the space available in the figure” (Rockström et al., 2009b, p. 24). The authors of this image hope that by establishing “non-negotiable planetary preconditions” we will respect them “in order to avoid the risk of deleterious or even catastrophic environmental change” (Rockström et al., 2009b, p. 33). Yet if they are non-negotiable, does that mean we cannot lower them? We are stuck with them?

As Stewart (2007) puts it, do not ask what this image means, but what it does, where it goes. Affect theorists have worked to establish an “archive of feeling” that focuses on works of art, images and texts, that are produced by counter-publics and mark their trajectories and practices

to reclaim or depathologize trauma, including grief and loss as evidenced by tears, as it is positioned by mainstream normative meaning-makers. The construction of such an archive shies away from prescribing boundaries as “safe spaces” and purposefully punctures existing boundaries to reveal their normative status and effects. If this image is part of my own archive of texts, perhaps one of “green feeling,” then it is so only once its boundaries are exposed as “*human-determined values* [that are] set at a ‘safe’ distance from a dangerous level [involving] normative judgments of how societies choose to deal with risk and uncertainty” (Rockström et al., 2009b, p. 33, my emphasis). What gets lost in such constructed visualizations of environmental catastrophe are their human-defined essence, and their effects on our emotional willingness, ability and preparedness to act. If Massumi is right that the media use affect to legitimate political power, then these images are, in our ever-increasingly visual culture, key to how we learn about, deal with and respond to climate change and biodiversity loss. Through engaging with theories of trauma and grief developed in gender, queer and postcolonial studies, environmental communicators and scholars have other tools available than those presently employed. Do I accept these planetary boundaries? What does it mean for biodiversity loss if the limits are safe only according to an anthropocentric view of the world? Reading such texts with an affective critique for whether or not they are useful and effective forms of environmental communication only enriches the possibility for reparation in our responses. And being able to cry, and to write about those tears, is part of the process of a reparative exposure to the crises.

This might be a morphology of Sedgwick’s (2003, p. 14) practice of reparative reading, an attempt to undo “any dualistic understanding of agency and passivity” in the field of theory. Or, to say it another way: the study of images (other, non-iconic; not wind turbines or melting ice floes, e.g. Höijer, 2010; Leiserowitz, 2006), as collected in an archive of green feelings offers a novel way into the role of affect in environmental communication, in that they: “permit a spacious agnosticism about several of the linear logics that enforce dualistic thinking” (Sedgwick, 2003, p. 8). The “spacious agnosticism” of this archive is an offer to put aside power and rethink relations between human and nonhuman forces via images not already emptied out of meaning to the point of irritation (Howell, 2013). It marks time and space for thought, to enter into a reflexive mode of interpretation about relations with and to *things*, to what Bennett (2010) has called their “vibrant materiality” or “thing-power” of the climate, of animals, of forests—and not just of a graph.

For the political scientist and cultural critic Nussbaum (2013), the cultivation of emotions such as altruism, love for others and compassion from our rawly felt affects is a desirable activity in which “aspiring societies” should engage. Nussbaum argues that such emotions are required to ensure the stability of good political principles, and are the motivations by which citizens will make the necessary sacrifices for the common good. However, as McQueen (2014, p. 651) summarizes: “Requiring states to cultivate particular emotions not only seems to endanger liberal commitments to freedom, autonomy, and equality, but also appears to demand that the state grossly overstep the legitimate limits on its power.” As is clear from environmental communications research into cultural cognitions and identity principles, such cultivation by states, organizational bodies and environmental campaign groups has often led to the opposite outcomes, and a greater polarization of the positions of consensus (Blake, 1999; Breakwell, 2010; Hards, 2011). As Kahan (2014, p. 14) puts it, communicators should instead “formulate strategies that seek to reproduce in the world effects that have been shown to help counter the dynamics of motivated reasoning responsible for such division.” The documentary *Cowspiracy* does just this: by making, first of all, current major environmental groups such as the Sierra Club, Greenpeace and WWF the common “baddie” for both grassroots environmental activists and right-leaning anti-environmental conservatives. But also important is that *Cowspiracy*’s “messenger” (Moser & Dilling, 2010) is portrayed as a typical, meat-eating, hard-working American who frames the debate, for the “confused moderates” (Barnes, Islam, & Toma, 2013) at least, as an issue that we can all respond to easily, by changing what we eat.

## Cowspiracy and filming the invisible

*Cowspiracy* begins with the story of a single protagonist's journey toward environmental activism (including vegan living practices) after watching, as a young teenager, Al Gore's documentary *An Inconvenient Truth* (Guggenheim, 2006). Stirred into action, the on-screen filmmaker Kip Anderson begins to reduce the number of showers he takes, switch off lights and recycle his waste, the typical behavioral change activities advocated by most governments and organizational materials (Whitmarsh, 2009). All of this is told with a mixture of film and graphs, with a wry self-deprecating humor (images of Anderson taking cold showers, for example). And yet these "baby steps" begin to feel inconsequential as the narrative of the film frames the protagonist's journey. Anderson begins to further investigate the causes behind climate change, and discovers that large-scale agro-business, especially animal agriculture, the single biggest culprit responsible for greenhouse gas emissions (FAO-UN, 2006; Goodland & Anhang, 2009). The documentary chases environmental organizations, especially Greenpeace and The Sierra Club, for answers as to why reducing or ending animal agriculture is not part of their campaign strategy. Plugged as "the film that environmental organizations don't want you to see," Greenpeace's reputation is particularly damaged.

The film activates a strong break with old and overused iconic climate change imagery when Anderson visits a "backyard farm" where an individual householder keeps ducks, for both eggs and meat. Anderson has arranged to watch the slaughter of one of the ducks. The idea is to explore alternatives to large-scale agro-business: is it possible for people to continue to use animals for food and products on a small scale and still be an environmentalist? The householder selects two ducks from his flock, and walks with them, holding them by the neck, to the chopping block. He puts one down nearby, and then places the other on the block, holding the wriggling duck by the neck. The camera does not move away from the scene; at the edges of the frame, we watch Anderson shift from leg to leg in an agitated state. The householder cannot get the duck positioned right as it wriggles, without making a sound, its neck on the block. Finally the householder has the duck in the position he wants, and reaches for a hatchet. The audience watches as the householder decapitates the duck. When finished, the duck's head is discarded and the body removed, as the householder then reaches for the other duck.

Watching this at an animal rights conference, many of the audience members turned their faces away, or cried out. The film lightens the emotional ballast immediately by following Anderson to a second backyard farm slaughter he had arranged to see, this time of a chicken. However, on arriving at the location, Anderson understands he cannot go through with the scene a second time. The film then shows Anderson driving, we believe away from the second slaughter, when the camera pans down to the passenger seat, where sits the chicken, which Anderson then delivers to an animal sanctuary. The audience exhales with relief, laughs and claps. This affective release is framed as the pivotal moment where Anderson's personal journey as a consumer meets his investigative journey as a filmmaker: we hear Anderson say that if he cannot bear witness himself to the slaughter of animals for consumption, even at this presumably less environmentally damaging backyard farm, then he cannot contribute to any form of animal agricultural practices. In her book *The Transmission of Affect*, Brennan (2003, p. 14) pointed out: "There is no secure distinction between the 'individual' and the 'environment.'" This moment in *Cowspiracy* collapses the divide between individual/environment by collapsing the rationality/affect boundary—also arbitrarily anthropogenic—as Anderson emphasizes the message of the film's exposure of violence against both planet and animals: "If you care about maintaining the planet's boundaries within safe limits, you must go vegan" (Anderson & Kuhn, 2014).

What is important about the affective nature of this traumatic scene as it is tied to the climax or pivot of the protagonist's narrative journey? What is going on here is what Hochschild (1979, p. 561) defines as "emotion work"—"the act of trying to change in degree or quality an emotion or feeling [...] the act of evoking or shaping, as well as suppressing, feeling in oneself." Gould has put this concept to work in exploring the relationship between affect and protest by social movements,

conceptualizing what it is that social movements are attempting to do when stimulating affective responses to their campaign materials, documentary films, books and white papers. For Gould:

Affective sensations, especially when the bodily intensity is concentrated and strong, can stir attempts to figure out what one is feeling. The force of affect, along with its bodily, nonlinguistic, inchoate, and nontransparent qualities, is particularly motivating in this regard: you sense that you have been moved, that you are feeling something, but you do not quite know what it is because you lack immediate access to it; those qualities spur and give force to the impetus to make sense of the affective state(s). Social movement contexts not only offer a language for people's affective states, they also provide an emotional pedagogy of sorts, a guide for what and how to feel and for what to do in light of those feelings. Movements, in short, "make sense" of inchoate affective states and authorize selected feelings and actions while downplaying and even invalidating others. (Gould, 2010, p. 33)

Of course, social movements work as political forces, making strategic decisions and taking widespread action leading to manifest changes in political, economic and cultural status quos, beyond their role as sense-making actors. Social movements also strategically employ emotions to mobilize and achieve political aims themselves. *Cowspiracy*, as a text produced by the social movement for environmental sustainability and animal rights, does this "emotion work" for its audience by providing immediate commentary, via Anderson's narrative, "to make sense of the affective state" of trauma that can arise when witnessing the slaughter of living, sentient animals. There are many, no doubt, who, coming across Rockström et al.'s graph, did not cry. But the purpose of this scene in the film of casual slaughter was the film's visual aim of "making the invisible visible" (Joy, 2011). Anderson's "messaging" work provides the "emotional pedagogy" of moving from a position of witness (watching the duck's slaughter) to activist (saving the chicken and turning vegan), stimulated by the affective energy, full of "potential" (Gould, 2010, p. 34) but, drawing on Massumi, directionless until led by the emotional processing of the affective state. In that, *Cowspiracy* is a highly intelligent film in helping achieve a social movement's goals, beginning with an investigation into environmental organizations but leading people to accept, rationally *and* emotionally, that to be an environmentalist, one *must* follow vegan lifestyle practices.

What is useful here for environmental communications practitioners and researchers is that *Cowspiracy* operates as a visual narrative that complexly interweaves ideas of behavior change, identity process and efficacious activism but does so through "emotion work," not of any individual emotion but through a nested series of bodily affects, seen in the protagonist's actions—as he cold showers, as he sits at his desk, as he watches the slaughter of the duck—which are then translated in the narrative into hope, despair, altruism, joy and compassion. If "messengers are part of the framing" (Moser & Dilling, 2010, p. 6), then it is not only a person but also their *affects* seen through their emotional states that communicate visually and affectively to trigger in the individual member of the public a response that can lead to pro-environmental changes in behavior. If "identity is the missing link," then understanding one's "total identity" (Jaspal et al., 2014) can only be done so through the lens of affect.

For Abrahamse, Gatersleben, and Uzzell (2009), questions around food consumption are also intimately linked to identity. Their work has indicated that attitudes toward eating meat are strongly related to identity, as are values of health—that is, those who identified as healthy also had strong positive identifications with eating meat. When presented with new information (e.g. to reduce meat consumption as part of an environmentally responsible behavior change), participants evaluated that information in a way "that matched their self-concept (identification with being a meat eater) as more positively than when it was not matched. However, no shifts in attitudes towards eating meat occurred" (Abrahamse et al., 2009, p. 4). Such results highlight the importance of examining the role of identities in relation to consumption, especially in relation to environmental outcomes. As noted by Jaspal et al. (2014, p. 121):

the IPCC [Intergovernmental Panel on Climate Change] has recommended that members of the general public should refrain from consuming meat at least one day a week in order to make an effective personal contribution to climate change mitigation. However, in some socio-cultural contexts prevalent social representations of meat may render this problematic for identity due to meat consumption being associated with masculinity [...] with

abandonment of meat consumption therefore potentially threatening the continuity and distinctiveness principles of identity.

What *Cowspiracy* achieves is to put forward a visual narrative of how “pro-environmental behaviors can come to be seen as serving identity principles, while simultaneously ensuring that such behavior does not threaten valued identity principles” (Jaspal et al., 2014, p. 120). The documentary offers an affecting journey from meat-eating American to animal-loving vegan with a foe (environmental organizations) that even the American Right can loathe. Although it does not quite “rid the science communication environment of the toxic partisan resonances that transform positions on climate change into badges of loyalty to contending factions” Kahan (2014, p. 11) the film has succeeded so far in broadening the cultural values held by members of the superordinate membership of being human and affected by climate change which can, in some cases, override subordinate membership of partisan groups (Jaspal & Breakwell, 2014). However, further research is required to examine how successful this film, and documentary, can be in leading people to adopt new behaviors.

## Conclusion

Effective public environmental communication requires a fuller understanding of the workings of affect as they impact upon motivated reasoning behind people’s actions (Kahan et al., 2012; Pidgeon & Fischhoff, 2011), as well as comprehension of how people react when their identities are threatened (Jaspal et al., 2014; Smith & Joffe, 2013). Such an understanding of how affective processes underpin these actions and reactions will strengthen future research. Taking my lead from cultural theorists’ attempts to elucidate the relationship between societies under pressure and its choice of communications/texts, this article has sought to contribute to a widening of the lens on the study of environmental communication. I have argued that without intersectional knowledge of the theories of affect offered in other disciplines, the study of environmental communication will be unable to fully get to grips with the pivotal role of emotions within environmental communication. This is to remind those grounded in the fields of cultural cognition, social representations and identity processes that the “individually *rational*” (Kahan, 2014, p. 11) choices made by citizens and consumers cannot be separated from the affective-laden experiences of what such choices will mean for them. As already noted, numerous studies of climate change in particular (Doyle, 2011; Höijer, 2010; Howell, 2013; Leiserowitz, 2006; Moser & Dilling, 2010; Smith & Joffe, 2013) have shown that the general public engages with environmental problems first of all visually. As such, this article has taken as its examples visual texts to explore how emotion and affect are mobilized to engage with the public’s sense of self in relation to environmental threats.

What is needed are further works—texts and communications—that do the “emotion work” of “evoking or shaping [...] feeling in oneself” (Hochschild, 1979, p. 561) toward living practices that do not leave us “comfortably unaware” (Oppenheimer, 2011) but that bring us via our rational *and* affective responses to an awareness of the need to act. It is with new sensations of possibility, thinking differently about our collective behaviors and their impacts upon the planet as that are “inscribed on the body” (Grosz, 2009, p. 87) in reactions such as crying, as punctures of our anthropomorphic boundaries, that we may come, as Barry hopes, “to learn to live in a manner that does not destroy our habitat and to consider the land around us and the life and processes it sustains as a measure of societal and biospheric well-being” (Barry, 2014, p. 556).

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