

Published as:

Brown, K., Adger, W. N., Devine-Wright, P., Anderies, J. M., Barr, S., Bousquet, F., Butler, C., Evans, L., Marshall, N. and Quinn, T. (2019) Empathy, place and identity interactions for sustainability. *Global Environmental Change* 56, 11-17.

Empathy, place and identity interactions for sustainability

Katrina Brown¹, W. Neil Adger¹, Patrick Devine-Wright¹, John M. Anderies², Stewart Barr¹, Francois Bousquet⁴, Catherine Butler¹, Louisa Evans¹, Nadine Marshall³, Tara Quinn¹

¹University of Exeter, UK; ²Arizona State University, US; ³CSIRO, Townsville, Australia; ⁴CIRAD, France.
katrina.brown@exeter.ac.uk

Why empathy?

While it is widely accepted that drivers of global environmental change include social and economic structures, values and behaviours, interdisciplinary analysis has yet to fully identify underlying phenomena that explain why societies do not recognize or move towards sustainability transitions. At their core many explanations rely on a dualism and distancing from nature. Rapid and unprecedented global change is manifest in fragmented societies; increasing environmental disasters; new technologies and automation; and new environments outside of lived experience. Each of these changes can further distance people from direct experience of nature. As environmental sustainability challenges become increasingly acute, the dynamics of place, encompassing individuals' emotional attachments, risk in relation to place, and the extent to which they are shaped by empathy or forms of division, have important implications for the resilience of societies (Brown 2016).

We propose an empathy-sustainability hypothesis to consolidate models of human-environment relations with empathy as a route to human action. In essence, the empathy-sustainability hypothesis proposes that empathy – through processes of perspective taking and emotional connection - is a pre-requisite for sustainable interactions with the biosphere. In this formulation, empathy re-connects humans and environment, and provides motivations for pro-environmental behavior and action. We contend that empathy with the non-human (i.e. 'natural') world can provide a basis for overcoming the conventional dualism between humans and nature, potentially encouraging a more interdependent mode of engagement with the environment. Building these connections is widely advocated in broad literatures on environmentalism, environmental philosophy and conservation, articulated for example in Leopold's Land Ethic and Wilson and Kellert's Biophilia, and more recently in discussions about the beneficial effects of nature on human wellbeing (Leopold, 1949; Wilson 1984; Kellert and Wilson 1995; Mayer et al., 2009).

We believe that empathy has a particular role in human-environment interactions. Empathy means taking the perspective of the other and feeling an emotional bond with that other. Empathy is analyzed as having both emotional and cognitive components. Emotional empathy relates to *experiencing* another person's emotional responses; the cognitive component refers to the capacity

of *understanding* others' emotions (Sevillano et al. 2007). While empathy between individuals has long been a concern of humanities and social sciences, here we argue that it has been neglected in sustainability research, and that combining analysis of empathy with others and empathy with the non-human world can bring significant advances to understanding sustainability challenges. A key distinction is made between empathy and compassion or sympathy (Firth, 2017; Goetz et al., 2010; Eisenberg, 1988). These terms are often treated synonymously, and are sometimes confused in the literature. Both are related to the development of social consciousness or an awareness of connections and relationships, both influencing and influenced by, one's world view. For example, Buddhism teaches the practice of compassion (called *karuna*), but this is the idea of sharing in suffering, having concern for another and feeling *for*, not feeling *with*, another. The work of Buddhist philosopher Mathieu Ricard for example, links compassion to altruism and extends this to all living beings (Ricard, nd). Compassion is, in effect, the cultural response arising from witnessing another's suffering and that motivates a subsequent desire to respond or action itself. In other words, empathy for others based on personal distress is not sufficient for action but requires a moral and active response. Empathy with nature is capacity to share the emotional experience of the natural world. An example is the cognitive capacity to understand distress of an animal that is suffering the consequences of pollution of its habitat or the progressive deterioration of a natural environment or resources (Tam, 2013).

Emerging concepts such as ecological solidarity examine human-environment relations as interdependences based on trust and reciprocity that go beyond notions of services or feedbacks (Mathavet et al., 2016). As Ostrom (2011) observed, all action situations are comprised of biophysical context, attributes of the community and institutions. We draw on scholarship from across the social and behavioural sciences to argue that concepts of place and identity are critical to fully understand the role of empathy in addressing sustainability challenges. We present novel analysis of the inter-relations between place, identity and empathy in order to examine their value in understanding the limits of existing actions and for realising sustainability in practice. We suggest that the interactions of place, identity, and empathy are often overlooked, but may be important in understanding human-environment relations within social ecological systems, that in turn elucidates behaviours, actions and decisions around sustainability. These new conceptualizations suggest a research agenda for sustainability science combining conceptual and methodological innovation on how empathy, place and identity play a significant role in shaping sustainability transformations.

Empathy and sustainability: Current understandings

Emerging research from environmental psychology, sociology and philosophy claims that building empathy within society and with the non-human world stimulates pro-social and pro-environmental identities and action (Rifkin, 2009; Krznaric, 2014). Enhancing empathy is often portrayed as a means to acknowledge otherness and transcend difference across social and spatial boundaries by creating mutual identities (Schultz, 2000; Berenguer 2007; Czap et al., 2012; Pahl and Bauer, 2013). Social theorist Rifkin (2009) developed an argument that empathy is expanding as part of a globalizing world such that contemporary societies demonstrate greater understanding and solidarity with one another and other species, and that this empathy may go beyond taking perspectives of living beings to empathy with the biosphere which supports that life. He suggests that empathy is beginning to

extend to all of life in the biosphere, and that this might give rise to the prospect of global consciousness as a means of combatting climate change and other global threats. Social philosopher Krznaric (2014) similarly argues for an ‘empathic revolution’ as an essential, transforming quality, while primatologist de Waal (2010) highlights empathy as a ‘natural’ characteristic of humans and other species, and promotes empathy as the basis for human cooperation in an ‘age of empathy’.

These writers posit that empathy provides a key emotional connection between humans and the non-human biosphere. Two interdisciplinary fields of analysis demonstrate how this connection is being developed in analysis and action-orientated work around sustainability. The emergence of ecopsychology and environment-wellbeing relationships includes an area of research examining mindfulness and its application to sustainability. Ericson et al (2014) present a review which explicitly links values, empathy and compassion to wellbeing and sustainable behaviour, hypothesizing mindfulness as a positively affecting both empathy and wellbeing, and both leading to sustainable behaviour. Wamsler (2018) explores the role of mindfulness – through compassion – as facilitating a “shift in the way we think about, and ultimately act on, local and global economic, social and ecological crises” (1122). Secondly, a burgeoning area of work discusses art-science collaborations, arguing that these activities enable emotional connections, including empathy and perspective-taking to champion sustainable development. For example, a recent special issue of the journal, *Ecology and Society* showcased diverse initiatives including photography, poetry, novels, art installations, and drama (Westley et al., nd). Curtis (2009) has examined the arts in creating empathy for ecological restoration, developing a ‘chains of inspiration’ to show how natural environment inspires art, that in turn inspires environmental protection and rehabilitation by increasing an emotional affinity toward nature, generating a cognitive interest in nature and provoking emotional indignation about insufficient nature protection. In a similar vein, Thomsen (2015) describes using photographs to develop emotional connections with landscapes and human and non-human species impacted by ecological change. Galafassi et al (2018), reviewing recent arts-science engagements on climate change, conclude that these are moving beyond more conventional confines of awareness raising and entering new terrain of interdisciplinarity and knowledge co-creation.

But empathy is not without its detractors, Bloom (2017a:24) highlights a ‘dark side’ of empathy in terms of personal morals and public policy (Decety and Cowell, 2014; Batson et al., 1995), and Zaki (2017: 59) refers to empathy as a ‘slippery term’ highlighting its different meanings across disciplines. Empathy with others does not necessarily lead to pro-social or pro-environmental behaviour and hence there are limits to how empathy with nature could promote sustainability. Clearly, empathy can potentially lead to a compassionate response that is associated with positive feelings, outward facing concern and pro-social behavior (Pfattheicher et al., 2016; Bethlehem et al., 2017). However, if feelings of empathy are not accompanied by agency, they can result in feelings of distress without action, as analysed in psychology and social neuroscience (Singer and Klimecki, 2014). Similarly, research has shown that overly empathic dispositions can tend to favour individual stories rather than less easily relatable collectives, and that individuals tend to over-empathize with types of people that share characteristics or of whom they are familiar (Bloom 2017a; Shuman 2010). Uncritical empathy has the potential to introduce biases in judgements about fair action when considering others (Bloom, 2017b).

Observational and experimental research, particularly in psychology and human geography, has shown how individuals take the perspective of and feel empathy for natural places. Some studies have shown how such empathy leads to conservationist intentions (Walker and Chapman, 2003). But these studies are limited and fragmented, often relying on laboratory-based experiments with very homogenous social groups, such as university students. Beyond empathy for particular people, animals or plants, research has also shown that strong attachment can lead to direct empathy for a particular place, in turn leading to pro-environmental intentions for the conservation and protection of that place. Individuals' relation to place, including their emotional attachments have, for example, explained how individuals adapt and mitigate environmental change (Singer and Klimecki, 2014; Butler et al., 2015; Marshall et al. 2012; Head et al. 2016). In parallel, research on issues of identity related to occupation and lifecourse, to citizenship and belonging, has begun to examine societal responses to environmental challenges (Whitmarsh and O'Neill, 2010; Clayton 2003; Rose, 1995). These areas of research provide limited insights on the potential for empathy to transcend social identities and promote environmental concern. They represent a starting point for developing interdisciplinary analysis of empathy-sustainability relationships, highlighting identity and place as critical factors affecting whether and how empathy prompts pro-social or pro-environmental behavior, and the shape or form of that behavior.

Empathy thus offers different pathways for realizing sustainability. An anthropocentric approach to sustainability values the welfare of present and future generations of humans, manifest in common definitions of sustainability. Research in psychology shows that empathy is malleable, and, for example, that increased empathy reduces inter-group prejudice (Batson et al., 2003). In parallel, empathy for future generations can be fostered, and that it leads to a variety of pro-environmental outcomes, including greater engagement with environmental problems and pro-environmental behaviour intentions (Pahl and Bauer, 2013). In contrast, ecocentric approaches to sustainability recognize intrinsic values in the natural world, both plants and animals and non-biotic elements such as mountains and rivers, and works to overcome conventional assumptions of human-environment distinctions. For example, consideration and empathy with the experience and rights of the wider world can expand an individual's scope of justice, or 'the psychological boundary for extending considerations of fairness toward others' (Opatow, 1996). 'Deep ecology' philosopher Naess (1990), for example, argued that to think like a mountain can lead individuals to take the perspective of, and have feelings for, the natural world. These perceptions are demonstrated in recent actions by governments around the world to recognize the personhood of elements of the environment, such as rivers and mountains being given such legal status in New Zealand and Canada (Morris and Ruru, 2010) although this has not guaranteed sustainable management.

Empathy, place and identity interactions

These discussions from different literatures serve to underscore that the relationship between empathy and sustainability is complex, fluid and contingent; it is not a linear or direct cause and effect link. We propose that place and identity are key factors mediating the relationship between empathy and sustainability, and we present this as a heuristic in Figure 1. We suggest that empathy is situated and emplaced in space and time. Whether empathy leads to sustainability depends on whether empathic responses transcend differences between groups within a place (e.g. 'incomers'

vs. 'natives') and across spatial boundaries (proximate vs. distant), while also recognizing the nature of empathy relations with and to particular groups or people in constituting spatial boundaries and difference. Relationships with nature are diverse across societies, based on emotions, shared history, and different values, thus shaping different types of empathies. Research on place and identity provides insights into the diversity of such interactions in different contexts.

Figure 1 here

Place and identity are recognised as having the potential to foster social and spatial exclusion as well as inclusion, including in divisions between different places, groups of people, and human-non-human relations (Fried, 2000; Dixon and Durrheim, 2000). This is likely to be particularly prevalent in contexts of rapid social ecological change, when exclusive narratives of place and identity may be justified by discourses of nostalgia, threat or catastrophe (for example, Greg Albrecht's notion of 'solastalgia', 2010).

Research in diverse disciplines, including geography and sociology, has shown how places have multiple dimensions that help to define identity processes at collective and individual levels (Casey, 1993; Twigger-Ross and Uzzell, 1996; Masterson et al. 2017). Hence, place has important implications for human responses to and efforts to shape environmental change. Place involves processes of generating meaning, emotional attachment and embodied engagement in particular environments (Altman and Low, 1992; Cresswell, 2014). Places and their construction are relational; how space and place are produced through social and political processes is a key insight from human geography (Massey, 2005). Such research positions space in its relation with time, highlighting how any one place is made up of multiple on-going trajectories. Places are therefore highly dynamic and perpetually engaged in processes of change and of generating meaning for those interacting with them. The frontiers of research in this area include questions on whether and how place-related identities offer possibilities for engendering radical social transformation (Escobar, 2001; Tomaney, 2013; Murphy and Smith, 2013) and the mechanisms by which loss of place is invoked to resist change. Much of this work focuses on the diversity of elements of place attachment; on critiques of local attachment as a form of parochialism; on mapping the social distribution of cosmopolitan identities and orientation; and the implications of these for environmental concern (Amin, 2002; Devine-Wright et al., 2015; Lewicka, 2011; Leung et al., 2015).

Recognition of the production of identities related to place is part of research on what populations can be identified as affected by environmental risks and who should participate in decision-making (e.g. the all-affected principle, Heyward, 2008). This leads to questions of whether local perspectives should be privileged in decisions, since the effects of such decisions go beyond the local scale to distant populations or to those in the future. Hence the implications of place, particularly place attachment, and its role in identity have been researched using diverse methods, with insights into their implications for environmental decision-making (Manzo and Devine-Wright, 2013).

Empathy is, we suggest, likely to be important in three different dimensions of sustainability action. First, empathy is required for individuals to understand the consequences of the impacts of environmental change on the natural world and on other populations. Empathy in this dimension facilitates conceptions of solidarity and the recognition of vulnerable communities. Second, for

empathy to contribute to sustainability, it requires conceptions of place, community and identity beyond those based directly on kinship and immediate locality. In other words, empathy which encompasses the ability to move beyond the local, to national and global scales in the scope of empathic engagement. Third, the extent of empathy determines the ability and likelihood of coordinated collective action for pro-environmental decisions. Thus, the presence of empathy generates the moral impetus for action. These three steps to sustainability are outlined below.

The first is where empathy is the ability to take the perspective of others subject to the impacts and consequences of environmental change. The consequences of environmental degradation, and of disasters ranging from floods and droughts to oil spills and nuclear accidents, are clearly highly disruptive to place and identities. As Solnit (2010) has argued, however, disasters are often generative of solidarity and forms of empathy both locally and across sometimes large distances. For example, when major floods struck areas of southern England in the winter of 2013/14, outpourings of support from across the UK led to fundraising and donations as well as high levels volunteering effort to help those affected. Equally, flooded communities in Somerset (one of the areas affected by the UK floods) formed new connections with people in other parts of the world affected by floods in moves to show their solidarity (Walker-Springett et al., 2017). Research analyzing general public discourse on climate change has documented how discussions on the impacts of climate change are commonly discussed in moral positions, based on notions of undeserving victims and solidarity with vulnerable populations (Adger et al., 2017). These examples highlight the relevance of empathy in reconfiguring spatial relations, generating new interconnections between places, and creating shifts in identity related to experiences.

The second step in necessary empathy is whether perceptions of solidarity extend beyond the local and whether identities related to place are bound with direct experience. Emerging research examines the impact of perceptions of nationhood and cosmopolitan notions of citizenship and responsibility on place-related identities (e.g. local, national and global). Ellis et al. (2009) provide an analysis of the multiple discourses that emerged in a conflict over an offshore wind farm in Northern Ireland. One finding concerned narratives of 'place sacrifice' that were drawn upon to support the wind farm proposals, arguing that the global environmental threat necessitated a sacrifice to the local area. Devine-Wright and Batel (2017) show how the relative strength of belonging at local, national and global levels varied across the UK population and is associated with significant differences in public support for energy infrastructures. In an Australian sample, people with stronger global than national belonging were found more likely to accept climate change as anthropogenic and to see it as a personal concern (Devine-Wright et al., 2015). Research can build on these findings to investigate how empathy is drawn upon by actors to propose the defense of the global environment, and to resist change to local places argued for their distinctiveness or uniqueness.

The challenge to encourage people to feel empathy towards those living at a physical distance from them has usually involved encouraging a sense of cosmopolitanism that comes accompanied with a scepticism for the effects of local belonging and support for the loosening of local bonds (see Tomaney, 2013). However, the assumption that local attachment necessarily fosters insularity and parochialism is flawed, as shown by studies examining the practical initiatives of UK Arts and Environment charity Common Ground, who encouraged a form of 'positive parochialism' that

encourages the valuing of the local while avoiding insularity (see Crouch and Matless, 1996). Research has shown that empathy is constrained by group affiliations and intergroup competitiveness. People are disposed to feel more care for ingroup than outgroup members. To mitigate this bias towards ingroup members and against outgroup members, research has shown that a fruitful way to reduce this effect is to lessen 'parochial empathy' or the disposition towards relatively greater empathy with the ingroup. This has been achieved empirically by providing narratives depicting outgroup members as emotive individuals, who are feeling worried arising from experiencing unfortunate situations or events (Bruneau et al., 2015).

The third step concerns in what circumstances empathy fosters coordinated collective action that leads to sustainable outcomes. There has been, for example, extensive research over the potential role that empathy can play in conflicts over locally unwanted land uses, even where they are part of low carbon transitions. Much of this research shows that identity with the local environment underpins community responses, revealed for example by narratives on emotional attachment drawn upon by residents implicated in siting disputes (Walker and Chapman, 2003), as well as the potential for shared local concerns to engender solidarity, support and resistance across national boundaries (Escobar, 2001; Gilmartin, 2009).

The three aspects of how empathy-sustainability relations are mediated by place and identity are illustrated in Figure 1. But processes of meaning of place, identity and relationships with nature are not fixed. The social fluidity of identity is a central feature of many, if not all, political contests and conflicts. Hence empathy itself requires insights into how it is created and the societal norms and processes underpinning for compassionate action.

Methods for empathy research

Emerging practice in sustainability science seeks diverse modes of research that engage both policy and other stakeholders to co-create knowledge that will inform sustainable pathways. To date, research into place, identity and empathy has tended to study these concepts independently, reflecting their evolution in the social and behavioural sciences. Hence interdisciplinary, transdisciplinary and participatory approaches have significant potential, for example, through co-production of knowledge in place-specific contexts via innovative participatory and creative methods, such as participatory theatre and role-playing (Evans et al., 2013; Bousquet et al., 2002; Brown et al., 2017). Furthermore, such approaches, along with place-based analysis, address shortcomings of the focus on individuals in social psychology, and on experiments which de-contextualise and only have limited application to more collective action problems around environmental and sustainability dilemmas. Table 1 illustrates the diversity of epistemological and methodological approaches for researching empathy.

Table 1 here

Exploratory methods aim to test how empathy is generated and its connections with place and identity, and might include a wide range of well-established methods ranging from individual life histories to cross-national comparative surveys. *Interactive methods* aim to test empathy-place-

identity relationships in diverse settings, and use a range of reflexive techniques, involving experiments or role-playing. An example is Playback Theatre, that is a form of improvisation performance which makes the emotions embedded into stories recounted by participants visible. Role-playing games and Forum Theatre aim to explore how participants can actively and collectively find solutions to a shared problem.

Figure 2 here

An example of using performance to generate empathy is 'Weather the Storm', a place-based theatre used to explore the impacts of coastal flooding in a fishing community in Cornwall, UK, detailed in Brown et al. (2017). 'Weather the Storm' was performed at various locations in the coastal community of Porthleven in Cornwall UK to explore the emotional impacts of, and responses to, extreme weather and coastal flooding. The performance took the audience from a pub-quiz in the safety of the public house at the top of the village, to experience the dramatic events at Seaview Terrace, where homes were flooded and residents evacuated during a violent storm, depicted in Figure 2. Exploring loss and grief associated with extreme weather, the show involved professional actors and included members of the community taking on roles. Thus the performance included singing by Porthleven Choir, and the participation of fishers, coastguards, publicans and other local residents and stakeholders. It was deeply affecting for the audience, engaging with a range of emotions and stimulating empathy in different ways. The emotional connection made in the performances enabled the emergence of empathic dialogues. The importance of this engagement and its potential for transformative change is reflected in participant Rose's comments after the Porthleven performance:

'Our approach of using technology and the rational paradigm, it doesn't actually generate motivated responses, because it happens up here [she points at her head] and not in there [points at her heart] so I think it is so important that we start dropping it down to there; so to do that, it is really important that we collaborate with those people [creative practitioners] because they are experienced practitioners of creating change here [points at her heart again]'. [Rose, Weather the Storm participant, September 2015].

In this context, a key objective of using creative methods to observe or generate empathy is to encourage individuals to engage in imaginary perspective taking with others that participants are not experienced or accustomed to thinking about, such as distant strangers and non-human subjects. Such reflection is significantly enhanced, it is argued, by creative interventions that support transformative actions and solutions and engender emotional responses (Brown et al., 2017).

Research using games, experiments and social simulations shows that the ability to enact co-operative action depends on trust in groups and perceptions of belongingness (Perez et al. 2015). Interactive games use new insights from behavioural economics and social psychology to analyze how place attachments and identities foster or constrain the ability of individuals to feel and act on empathy with others and the non-human world. Designs could encompass belonging to the biophysical environment as well as to social groups, examining ways that perspective taking and

emotional relations with human and non-human others can be fostered, and with what consequences for environmental decision-making under contexts of rapid environmental change.

Generative methods are action-oriented and collaborative, and specifically aim to co-produce empathy-based strategies for positive change. Critical to this process of collaborative working will be to evaluate how and whether these kinds of approaches deliver meaningful, sustained, and emancipatory mechanisms for building empathy with humans and non-humans. Indeed, a key critique of the empathy movement is that the outcomes of perspective taking are ineffectual. Those arguing for a more rational approach to empathy suggest that promotion of knowledge on ways to help other is required before acting, thereby maximizing the impact of empathic actions. The key question is whether the diverse methods outlined in Table 1 can transcend a tendency towards inter-group favoritism, or ethnocentrism to reach across multiple scales and across social and spatial boundaries. Critically, purposefully designing action research and policy interventions to arouse empathy in people and communities carries important ethical implications in terms of both substantive outcomes and process. Empathy building techniques are applied in medicine and education, and in legal fields for truth and reconciliation, often using storytelling and role play. But there may particular impacts on vulnerable people, and raise critical issues about power and control, knowledge co-creation (Wallin et al., 2018) and may require changes in institutional operations (Benbasset and Baomal 2004).

Testing the hypothesis: research challenges

What new lines of inquiry are opened up our empathy-sustainability hypothesis? There are, we suggest, two immediate major challenges: environmental circumstances beyond present experience, and the transformations required for sustainability. Testing empathy-sustainability hypotheses in these contexts will, we suggest, yield important insights and perspectives. The first challenge involves moving research beyond linear trajectories of change to better understand societal responses to significant changes to social-ecological systems. Current and future environmental changes present new, uncharted and never-experienced conditions for humanity. Can empathy, place and identities be reconfigured in rapidly changing conditions and novel social ecological systems? Second, sustainability science identifies the need for transformations to address these unprecedented changes, to identify sustainable pathways and new strategies, institutions and knowledges necessary.

The new normal – disruptions to place and identities and the role for empathy

Accelerating and unprecedented change is the 'new normal' (Graham et al., 2014; Pendall et al., 2010). This is evidenced in apparently increasing environmental disasters, in the adoption of new technologies for climate change mitigation, and in climates outside of lived experience (Fincher et al., 2014). The rapid pace of environmental and social change is forcing significant transformations in place, identity and, we suggest, empathy for others. But at the same time, deliberate and purposeful transformations, including through the malleable notions of place, identity and empathy are advocated to respond to the environmental sustainability challenge. Thus, as environmental sustainability challenges become increasingly acute, the dynamics of place and identity, and the

extent to which they are shaped by empathy or forms of division and individualism, have important implications for society, for outcomes and effectiveness of different interventions, and for the impacts on different people and places.

The new normal results in unfamiliar contexts, landscapes and potentially for novel ecosystems. These might be the results of environmental change, for example the re-configuration of the Great Barrier Reef as a result of coral bleaching, or the result of planned social and technical transformations, such as new towns, rapid demographic change through urbanisation, or landscape dynamics in coastlines as a result of managed retreat allowing coastal re-alignment and inundation of previously protected land. Land loss to coastal change can be incremental (Burley et al., 2007) or severe and require relocation of entire communities (Maldonado et al., 2013). Burley et al. (2007) show how perceptions of place and identity compound perceived loss in coastal Louisiana, and how an 'empathy gap' between communities and policy makers exacerbated feelings of helplessness. A study on relocation of coastal communities in the US (Shearer, 2012) highlights the significance of identity and place in the experience of transition – and also draws attention to the perceived rigidity of bureaucracy and inadequate government mechanisms. These studies highlight the negative impact of perceived lack of concern and attention from government bodies and suggest a focus for research on empathy between planners and the populations that they plan for, in order to better understand conflicts around novel ecosystem management.

Rapid environmental and social change creates challenges for identity, and also the emergence of new shared narratives. In the case of the coastal area near Montpellier in France, a novel social-ecological system created in the 1960s that has been gradually transformed over the past 50 years. To host migrants from North Africa and later to attract new populations (retirees, tourists, entrepreneurs), wetlands were drained, mosquito populations eradicated, rivers controlled with dams and dykes, transport infrastructures constructed and new urban settlements continually in development. Here, place, identity and relationships with nature have been mobilized into political struggles and narratives around nature, infrastructure and place have developed (Quinn et al., 2018). Empathy is evoked through these narratives, giving agency to and emotion – for example, flood or mosquito blooms expressed as anger. The river is given a personal name ('Vidourle' instead of 'The Vidourle') and residents refer to the emotions of the river (as irascible, or a joker). This emotional component of empathy reinforces a narrative on liberty of nature and the associated adaptive management.

Rapid social ecological change brings significant and often negative consequences for livelihoods and wellbeing, as well as posing threats to identity processes, disrupting continuity in place relations between past and present (Twigger-Ross and Uzzell, 1996). It may also prompt exclusive narratives of place and identity that reinforce spatial and social boundaries and are justified by discourses of nostalgia, threat or catastrophe. When and where is this articulated? In circumstances of rapid social ecological change, elements of place and identity may limit an ethics of care with the 'other', and building empathy with people and the environment could potentially be an effective means to facilitate sustainability in rapidly changing social and environmental circumstances by reframing identities and relations with place. Interrogating the where, how and who of these transformations can provide important insights for climate change adaptation, and acknowledging the interactions of place, identities and empathy might pinpoint ways forward for beleaguered policy-makers faced

with dilemmas of transformation. Marshall et al. (2012) for example, show how place meanings and occupational attachment and identities support adaptation, but may constrain transformative change amongst Australian farmers. Extending this analysis of relationship to place to relationship with others (people and places) would further inform individual behavior and collective action in the 'new normal' of the Anthropocene.

New processes of deliberation – examining the role of empathy, place and identity in shaping transformative approaches to sustainability

Deliberate processes of socio-technological transformation involve action directed toward particular goals or ends, even if these are contested. Here we understand such purposive transformations (Raven et al. 2012) as including both those that arise, for example, from transforming energy systems, and those that simply recognize the needs for fundamental shifts as necessary to the emergence of desirable futures (O'Brien, 2012). Transformative processes disrupt place, identity, and empathy that influence the success or failure of efforts to enact change.

Applying an empathy-place-identity lens may also help to integrate the personal, political and practical dimensions of transformation necessary for sustainability (O'Brien, 2012). Place and identity represent key socio-psychological processes in social and environmental change, and introducing empathy is a way of gaining a richer understanding, of highlighting connections between identity and place, and generating a qualitative reframing of our understanding of sustainability.

Conclusions

Empathy is, we argue, a critical but hitherto neglected variable in sustainability research because of its central role in human-environment relations. Evidence across disciplines has shown how empathic and emotional engagement creates cultural meaning and embeds the environment and pro-environmental behaviour in place-oriented norms and institutions. In the same way as the creation of exclusionary identities facilitates the demonization and exploitation of marginalised groups, so the distancing of humans from nature creates the conditions for over-exploitation of nature and disconnection from the biosphere. These processes have been implicit in sustainability models in many disciplines: here we posited that empathy can promote sustainability when individuals have empathic relations with the consequences of environmental harm, when they have inclusive identities beyond their locality, and when empathy promotes collective responses.

The key limitation alluded to throughout this paper is that empathy for others is not sufficient for action. We have argued that empathy for nature, embedded as it is in relation to place and underlying identity processes or identities, is similarly limited because of the complexity of those relations. Indeed, much evidence shows how attachment to place can both promote sustainability and act as a barrier to progressive action arising from particular circumstances. Adding analysis of place and identity can provide important insights into how and why empathy might be related to sustainability. We show how these relationships are mediated through dynamic social processes around the meanings and construction of place and identity.

Better understandings of the empathy-sustainability relationship, and the mediating roles of place and identity, can inform policy domains from climate and environmental policy, urban planning, economic and trade policy, to international relations. First, in order to avert unexpected negative impacts, it is important to account for the inadvertent impacts of policy on people's place and identity and what this means for who or what they feel empathy towards. Second, understanding how to enhance empathy offers different policy pathways for realizing sustainability outcomes. It may be possible to enhance absolute levels of empathy that are durable over time, but it is also possible that empathy is a relative emotion whereby enhancing empathy in one direction diminishes it in another or where enhancing empathy in the short-term has implications for longer term emotions and actions. These issues suggest the value of empathy-place and identity interactions as a cutting edge for sustainability research.

References

- Adger, W.N., Butler, C., Walker-Springett, K. 2017. Moral reasoning in adaptation to climate change. *Environmental Politics* 26, 371-390.
- Albrecht, G., 2010. Solastalgia and the creation of new ways of living. *Nature and culture: Rebuilding lost connections*, pp.217-234.
- Altman, I., Low, S. 1992. *Place Attachment*. Plenum Press, New York.
- Amin, A. 2002. Ethnicity and the multicultural city: living with diversity. *Environment and Planning A* 34, 959-980.
- Batson, C.D., Klein, T.R., Highberger, L. and Shaw, L.L., 1995. Immorality from empathy-induced altruism: When compassion and justice conflict. *Journal of personality and social psychology*, 68(6), p.1042.
- Batson, C.D., Lishner, D.A., Carpenter, A., Dulin, L., Harjusola-Webb, S., Stocks, E.L., Gale, S., Hassan, O., Sampat, B. 2003. As you would have them do unto you: Does imagining yourself in the other's place stimulate moral action? *Personality and Social Psychology Bulletin* 29, 1190-1201.
- Benbassat, J. and Baumal, R., 2004. What is empathy, and how can it be promoted during clinical clerkships?. *Academic Medicine*, 79(9), pp.832-839.
- Bethlehem, R.A., Allison, C., van Andel, E.M., Coles, A.I., Neil, K. and Baron-Cohen, S., 2017. Does empathy predict altruism in the wild?. *Social neuroscience*, 12(6), pp.743-750.
- Berenguer, J. 2007. The effect of empathy in pro-environmental attitudes and behaviors. *Environment and Behaviour* 39, 269–283.
- Bloom, P., 2017a. Empathy and its discontents. *Trends in cognitive sciences*, 21(1), pp.24-31.
- Bloom, P. 2017b. *Against empathy: The case for rational compassion*. Random House, London.
- Bousquet, F., Barreteau, O, Aquino, P, Etienne, M., Boissau, S., Aubert, S., Le Page, C., Babin, D., Castella, J. 2002. Multi-agent systems and role games : collective learning processes for ecosystem management. In Janssen, M. (Eds). *Complexity and Ecosystem Management: The Theory and Practice of Multi-agent Approaches*. 248-285 Edward Elgar, Cheltenham.
- Brown, K., 2016. *Resilience, Development and Global Change*. Routledge, London.
- Brown, K, Erstmann, N., Huke, A., Reding, N. 2017. The drama of resilience: Learning, doing and sharing for sustainability. *Ecology and Society* 22(2), 8.
- Bruneau EG, Cikara M, Saxe R (2015) Minding the Gap: Narrative Descriptions about Mental States Attenuate Parochial Empathy. *PLoS ONE* 10(10): e0140838.
<https://doi.org/10.1371/journal.pone.0140838>
- Burley, D., Jenkins, P., Laska, S., Davis, T. 2007. Place attachment and environmental change in coastal Louisiana. *Organization & Environment* 20, 347-366.

- Butler, C., Demski, C., Parkhill, K., Pidgeon, N., Spence, A. 2015. Public values for energy futures: Framing, indeterminacy and policy-making. *Energy Policy* 87, 665-672.
- Casey, E.S. 1993. *Getting back into place: Towards a renewed understanding of the place-world*. Indiana University Press, Bloomington.
- Clayton, S. 2003. Environmental Identity: A Conceptual and an Operational Definition. In S. Clayton, S. Opatow (Eds.) *Identity and the natural environment: The psychological significance of nature*. pp. 45-65, MIT Press, Cambridge.
- Cresswell, T. 2014. *Place: A short introduction* Wiley-Blackwell, Oxford.
- Crouch, D. and Matless, D., 1996. Refiguring geography: Parish maps of common ground. *Transactions of the Institute of British Geographers*, pp.236-255.
- Curtis, D.J., 2009. Creating inspiration: the role of the arts in creating empathy for ecological restoration. *Ecological Management & Restoration*, 10(3), pp.174-184.
- Czap, N.V. Czap, H.J. Khachatryan, M. Lynne, G.D., Burbach M.E. 2012. Walking in the shoes of others: experimental testing of dual-interest and empathy in environmental choice. *Journal of Socio-Economics* 41, 642–653.
- Decety, J. and Cowell, J.M., 2014. The complex relation between morality and empathy. *Trends in cognitive sciences*, 18(7), pp.337-339.
- Devine-Wright, P., Batel, S. 2017. My neighbourhood, my country or my planet? The influence of multiple place attachments and climate change concern on beliefs about energy infrastructure. *Global Environmental Change* 47, 110 – 120.
- Devine-Wright, P., Leviston, Z., Price, J. 2015. My country or my planet? Exploring the influence of multiple place attachments and ideological beliefs upon climate change attitudes and opinions. *Global Environmental Change* 30, 68-79.
- De Waal, F. 2010. *The age of empathy: Nature's lessons for a kinder society*. Broadway Books, New York.
- Dixon, J., Durrheim, K. 2000. Displacing place identity: A discursive approach to locating self and other. *British Journal of Social Psychology* 39, 27–44.
- Eisenberg, N. 1988. Empathy and sympathy: A brief review of the concepts and empirical literature. *Anthrozoös* 2(1), 15-17.
- Ellis, G., Cowell, R., Warren, C., Strachan, P. A., Szarka, J. 2009. Wind power: Is there a “planning problem”? *Planning Theory and Practice* 10, 521–547.
- Ericson, T., Kjønstad, B.G. and Barstad, A., 2014. Mindfulness and sustainability. *Ecological Economics*, 104, pp.73-79.
- Escobar, A. 2001. Culture sits in places: Reflections on globalism and subaltern strategies of localization. *Political Geography* 20, 139–174.

- Evans LS, Hicks CC, Fidelman P, Tobin RC, Perry A. 2013. Future scenarios as a research tool: Investigating climate change impacts, adaptation options and outcomes for the Great Barrier Reef, Australia. *Human Ecology* 41, 841-857.
- Fincher, R., Barnett, J., Graham, S., Hurlimann, A. 2014. Time stories: Making sense of futures in anticipation of sea-level rise. *Geoforum* 56, 201-210.
- Firth N. 2017. Does altruism need science? *New Scientist* 22nd February, 22-23.
- Fried, M. 2000. Continuities and discontinuities of place. *Journal of Environmental Psychology* 20, 193-205.
- Galafassi, D., Kagan, S., Milkoreit, M., Heras, M., Bilodeau, C., Bourke, S.J., Merrie, A., Guerrero, L., Pétursdóttir, G. and Tàbara, J.D., 2018. 'Raising the temperature': the arts in a warming planet. *Current Opinion in Environmental Sustainability*, 31, pp.71-79.
- Gilmartin, M. 2009. Border thinking: Rosspport, Shell and the political geographies of a gas pipeline. *Political Geography* 28, 274-282.
- Goetz, J.L., Keltner, D., Simon-Thomas, E. 2010. Compassion: an evolutionary analysis and empirical review. *Psychological Bulletin* 136, 351-374.
- Graham, N.A., Cinner, J.E., Norström, A.V., Nyström, M. 2014. Coral reefs as novel ecosystems: embracing new futures. *Current Opinion in Environmental Sustainability* 7, 9-14.
- Head, L., Gibson, C., Gill, N., Carr, C., Waitt, G. 2016. A meta-ethnography to synthesize household cultural research for climate change response. *Local Environment* 21, 1467-1481.
- Heyward, C. 2008. Can the all-affected principle include future persons? Green deliberative democracy and the non-identity problem. *Environmental Politics* 17, 625-643.
- Kellert, S. and Wilson, E.O. (eds) 1995 *The Biophilia Hypothesis*, Island Press.
- Krznicaric, R. 2014. *Empathy: A handbook for revolution*. Random House, London.
- Leopold, A. 1949 [1989] *A Sand County Almanac*. Oxford University Press, Oxford.
- Leung, A., Koh, K., Tam, K-P. 2015. Being environmentally responsible: Cosmopolitan orientation predicts pro-environmental behaviors. *Journal of Environmental Psychology* 43, 79-94.
- Lewicka, M. 2011. Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology* 31, 207-230.
- Maldonado, J.K., Shearer, C., Bronen, R., Peterson, K., Lazrus, H. 2013. The impact of climate change on tribal communities in the US: displacement, relocation, and human rights. *Climatic Change* 120, 601-614.
- Manzo, L., Devine-Wright, P. Eds. 2013. *Place Attachment: Advances in Theory, Method and Applications*. Routledge, London.

- Marshall, N.A., Park, S.E., Adger, W. N., Brown, K., Howden S.M. 2012. Transformational capacity and the influence of place and identity. *Environmental Research Letters* 7(3), 034022.
- Massey, D. 2005. *For Space*. Routledge, London.
- Masterson, V.A., Stedman, R.C., Enqvist, J., Tengö, M., Giusti, M., Wahl, D. and Svedin, U., 2017. The contribution of sense of place to social-ecological systems research: a review and research agenda. *Ecology and Society*, 22(1).
- Mathevet, R., Thompson, J., Folke, C., et al. 2016. Protected areas and their surrounding territory: social-ecological systems in the context of ecological solidarity. *Ecological Applications* 26, 5–16.
- Mayer, F.S., Frantz, C.M., Bruehlman-Senecal, E., Dolliver, K. 2009. Why is nature beneficial? The role of connectedness to nature. *Environment and Behavior* 41, 607-643.
- Morris, J.D.K., Ruru, J. 2010. Giving voice to rivers: legal personality as a vehicle for recognising indigenous peoples' relationships to water. *Australian Indigenous Law Review* 14, 49.
- Murphy, J., Smith, A. 2013. Understanding transition-periphery dynamics: renewable energy in the Highlands and Islands of Scotland. *Environment and Planning A* 45, 691-709.
- Naess, A. 1990. *Ecology, community and lifestyle: outline of an ecosophy*. Cambridge University Press, Cambridge.
- O'Brien, K., 2012. Global environmental change: from adaptation to deliberate transformation. *Progress in Human Geography* 36, 667-676.
- Opatow, S. 1996. Is justice finite? The case of environmental inclusion. In Montada, L., Lerner, M.J. eds. *Current societal concerns about justice*. pp. 213-230 Springer, Berlin.
- Ostrom, E. 2011. Background on the Institutional Analysis and Development framework. *Policy Studies Journal* 39, 7–27.
- Pahl, S., Bauer, J. 2013. Overcoming the distance: perspective taking with future humans improves environmental engagement. *Environment and Behaviour* 45, 155–169.
- Pendall, R., Foster, K.A., Cowell, M. 2010. Resilience and regions: building understanding of the metaphor. *Cambridge Journal of Regions, Economy and Society* 3, 71-84.
- Perez, I., Yu, D. J., Janssen, M. A., Anderies, J. M. 2015. Social roles and performances of social-ecological systems: Evidence from behavioral lab experiments. *Ecology and Society* 20(3), 23.
- Pfattheicher, S., Sassenrath, C. and Schindler, S., 2016. Feelings for the suffering of others and the environment: Compassion fosters proenvironmental tendencies. *Environment and Behavior*, 48(7), pp.929-945.
- Quinn, T., Bousquet, F., Guerbois, C., Sougrati, E. and Tabutaud, M., 2018. The dynamic relationship between sense of place and risk perception in landscapes of mobility. *Ecology and Society*, 23(2).
- Raven, R., Schot, J., Berkhout, F. 2012. Space and scale in socio-technical transitions. *Environmental Innovation and Societal Transitions* 4, 63-78.

Ricard, M., nd. www.matthieuricard.org/en/articles/categories/articles-about-buddhism Accessed 12 December 2018.

Rifkin, J. 2009. *The empathic civilization: The race to global consciousness in a world in crisis*. Penguin, London.

Rose, G. 1995. Place and identity: a sense of place. In D. Massey, P. Jess Eds. *A Place in the World* pp. 87-132, Open University Press, Milton Keynes.

Schultz, P.W. 2000. Empathizing with nature: the effects of perspective taking on concern for environmental issues. *Journal of Social Issues* 56, 391–406.

Sevillano, V., Aragonés, J.I., Schultz, P.W. 2007. Perspective taking, environmental concern, and the moderating role of dispositional empathy. *Environment and Behavior* 39, 685-705.

Shearer, C. 2012. The political ecology of climate adaptation assistance: Alaska Natives, displacement, and relocation. *Journal of Political Ecology* 19, 174-183.

Shuman, A., 2010. *Other people's stories: Entitlement claims and the critique of empathy*. University of Illinois Press.

Singer, T., Klimecki, O.M. 2014. Empathy and compassion. *Current Biology* 24, R875-R878.

Solnit, R. 2012. *A paradise built in hell: The extraordinary communities that arise in disaster*. Penguin, London.

Tam, K.P. 2013. Dispositional empathy with nature. *Journal of Environmental Psychology* 35, 92-104.

Thomsen, D.C., 2015. Seeing is questioning: prompting sustainability discourses through an evocative visual agenda. *Ecology and Society*, 20(4).

Tomaney, J. 2013. Parochialism: a defence. *Progress in Human Geography* 37, 658-672.

Twigger-Ross, C.L., Uzzell, D.L. 1996. Place and identity processes. *Journal of Environmental Psychology* 16, 205-220.

Walker, G.J., Chapman, R. 2003. Thinking like a park: the effects of sense of place, perspective-taking, and empathy on pro-environmental intentions. *Journal of Park and Recreation Administration* 21, 71-86.

Walker-Springett, K., Butler, C., Adger, W.N. 2017. Wellbeing in the aftermath of floods. *Health and Place* 43, 66-74.

Wallin, A., Koro-Ljungberg, M. and Eskola, J., 2018. The method of empathy-based stories. *International Journal of Research & Method in Education*, pp.1-11.

Wamsler, C., 2018. Mind the gap: The role of mindfulness in adapting to increasing risk and climate change. *Sustainability science*, pp.1-15.

Westley, F., Shaeffer, M., Folke C. (eds) n.d. Reconciling Art and Science for Sustainability. Special issue of *Ecology and Society* <https://www.ecologyandsociety.org/issues/view.php?sf=112>

Whitmarsh, L., O'Neill, S. 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, 305-314.

Wilson, Edward O. 1984. *Biophilia*. Cambridge: Harvard University Press. ISBN 0-674-07442-4.

Zaki, J., 2017. Moving beyond stereotypes of empathy. *Trends in cognitive sciences*, 21(2), pp.59-60.

Figure 1 Conceptual model linking Empathy Place and Identity to Sustainability

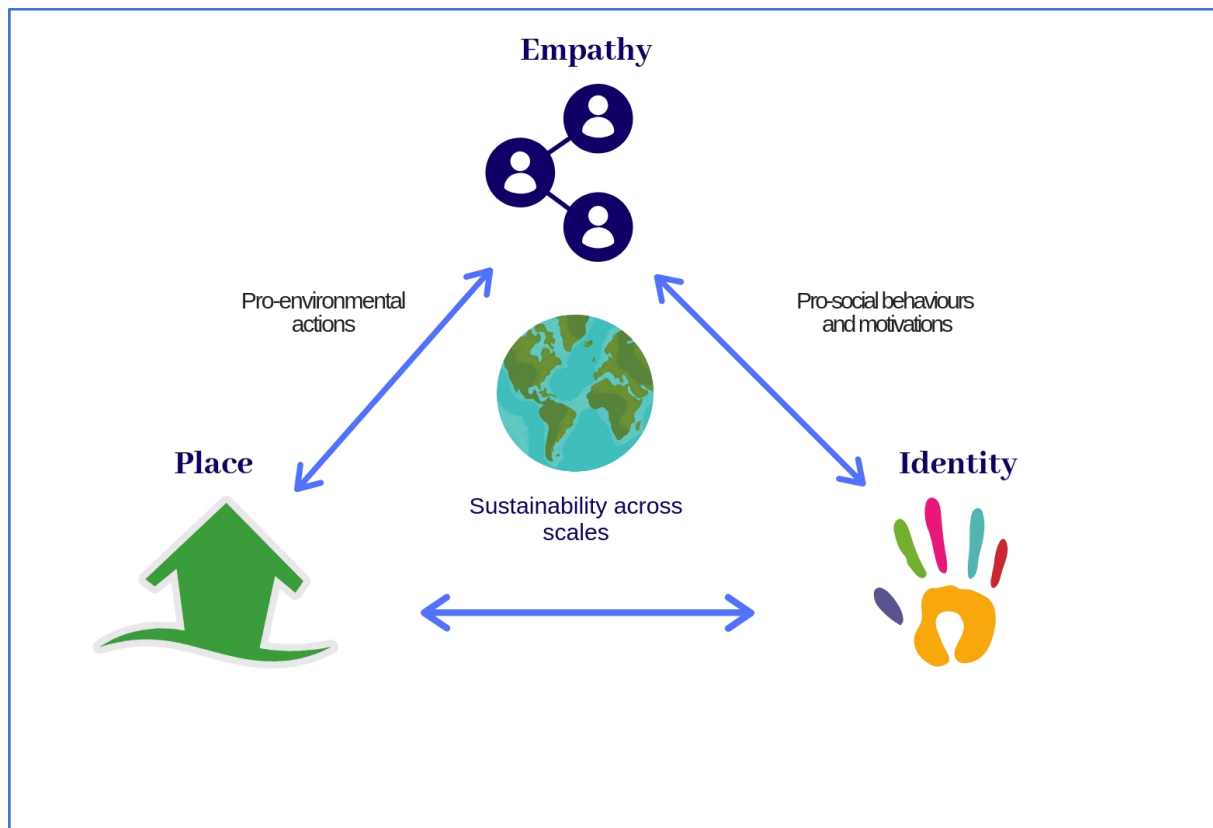


Table 1 Methodological approaches for exploring empathy

	Scope	Purpose	Indicative methods	Examples
Exploratory	Theory building and hypothesis testing	Theorising how empathy is generated and its connections with place and identity	Analysing secondary quantitative data Large-scale quantitative surveys In depth interviews Observation Ethnography Life histories.	Using cross-national datasets to examine cross-cultural relationships between empathy, place and identity Using life histories to plot narratives and uncover deeply embedded empathy, place and identity connections Analysing cultural events that mobilize connection with nature.
Interactive	Methodologically reflexive	Testing empathy-place-identity relationships in a range of settings.	Playback theatre Forum Theatre Role playing Interactive games	Using experiments to test how empathy develops and changes Using role play to examine how empathic responses can be promoted
Generative	Action-oriented and collaborative	Co-producing empathy-based strategies for achieving positive change.	Storytelling Empathy toys Social learning Competency groups	Using competency groups to generate local capacity for social learning and re-distributing expertise

Figure 2 Scene from participatory theatre performance 'Weather the Storm' representing residents experiencing flooding, and seeking to promote empathy for populations at risk, coastal Cornwall, UK



Source: Brown et al. (2017) Photo Credit: Toby Lowe