Chapter 10
Global Climate Change: A Social Identity Perspective on Informational and Structural Interventions

Mark A. Ferguson, Rachel I. McDonald, and Nyla R. Branscombe

Climate change is one of the major challenges facing the world today. As levels of carbon emissions continue to build in our planet's atmosphere, scientists predict a wide range of harmful effects on the natural environment. This includes an increase in extreme weather events (such as heatwaves, droughts, and wildfires) and an increase in resource degradation (such as shortages of food and water, biodiversity loss, and worsened pollution; IPCC, 2014). As a result, climate change is likely to cause considerable damage to plants, animals, and ecosystems around the world, and this damage would persist well into the foreseeable future.

Scientists predict a range of harmful effects on human societies as well, including an increase in interpersonal violence and intergroup conflict. Hsiang, Burke, and Miguel (2013) conducted a meta-analysis of studies on the relationship between climate change and violence from around 8000 BCE to 2010. They found that for every one-standard deviation increase in temperature or rainfall, interpersonal violence (such as assault) increased by 4 % and intergroup conflict (such as civil war) by 14 %. Changing climates appear to magnify the drivers underlying violence and conflict, such as poverty and economic shocks (IPCC, 2014). The harmful effects also include mass dislocation and more environmental injustice. With extreme weather, degraded resources, and greater conflict, people will increasingly become displaced from their homes and be forced to migrate to other places, especially in low-income and developing nations (IPCC, 2014). In effect, climate change can damage important social identities (Jetten, Haslam,

M.A. Ferguson (✉)
University of Wisconsin–Stevens Point, D240 Science building,
2001 Fourth Avenue, Stevens Point, WI 54481-3897, USA
e-mail: Mark.Ferguson@uwsp.edu

R.I. McDonald • N.R. Branscombe
University of Kansas, Lawrence, KS, USA
e-mail: rachel.mcdonald@ku.edu; nyla@ku.edu

S. McKeown et al. (eds.), *Understanding Peace and Conflict Through Social Identity Theory*, Peace Psychology Book Series,
DOI 10.1007/978-3-319-29869-6_10

Iyer, & Haslam, 2010), as well as personal and collective well-being (Doherty & Clayton, 2011). Thus, climate change is as much a concern for peace and conflict, as it is for the natural environment.

Given the threat posed by climate change, there is a growing need for action to mitigate carbon emissions and begin adapting societies to the most likely consequences. This means that there is a need for *behaviour change*—change in individuals' everyday behaviours that contribute to carbon emissions. In the United States, individual households contribute roughly 38 % of the national emissions and roughly 8 % of the worldwide emissions (Dietz, Gardner, Gilligan, Stern, & Vandenbergh, 2009). Thus, it is imperative to minimise the behaviours that increase emissions (such as electricity or gasoline consumption) and to increase the behaviours that reduce emissions (such as better home insulation or use of solar panels; Karlin et al., 2014). Even if technological solutions are eventually found, people will still need to change their behaviour to accommodate these advancements. This also means that there is a need for *policy change*—change in corporate and governmental practices that contribute to carbon emissions or encumber effective adaptation to climate change. The support of business and political leaders is imperative for articulating the climate threat to the public, as well as taking steps to minimise its damaging effects on societies and the natural environment.

Over the past decade, the discipline of psychology has become increasingly interested in climate change. Indeed, there has been a growing push to understand reactions to climate change and willingness to take action to prevent and reduce its impacts. This push has been reflected in increasing public calls about the urgency of climate change and its relevance to psychology. For instance, climate change has been called "one of the major threats facing humanity" (Clayton et al., 2015) and psychology has been called on to "help save the world" (Oskamp, 2007). As Swim et al. (2011) point out, psychology is well positioned to help us clarify the thoughts, feelings, and behaviours associated with both mitigation and adaptation. Such calls contributed to the assembly of a task force report on climate change (APA, 2009), as well as a subsequent report on its psychological impacts (Clayton, Manning, & Hodge, 2014).

This push to understand climate change has also been reflected in the growing number of scientific publications on the psychology of climate change. To assess this growth, we conducted a PsycINFO search for publications that mentioned "climate change" or "global warming" over a thirty-year period (1985–2014). Figure 10.1 shows a substantial increase in publications, particularly following the release of *An Inconvenient Truth*, a documentary film about Al Gore's attempts to educate the public about climate change (Bender & Guggenheim, 2006). The correlation between year of publication and number of publications is significant, $r(28) = .78$, $p < .001$, and continues to be robust regardless of whether non-peer reviewed publications are included or excluded. If the focus is shifted to publications after 1996, the last year without a single publication on the psychology of climate change, the correlation becomes even stronger, $r(16) = .90$, $p < .001$. These results are consistent with, as well as extend, earlier analyses demonstrating the growing imperative in psychology to understand climate change (Swim, Markowitz, & Bloodhart, 2012).

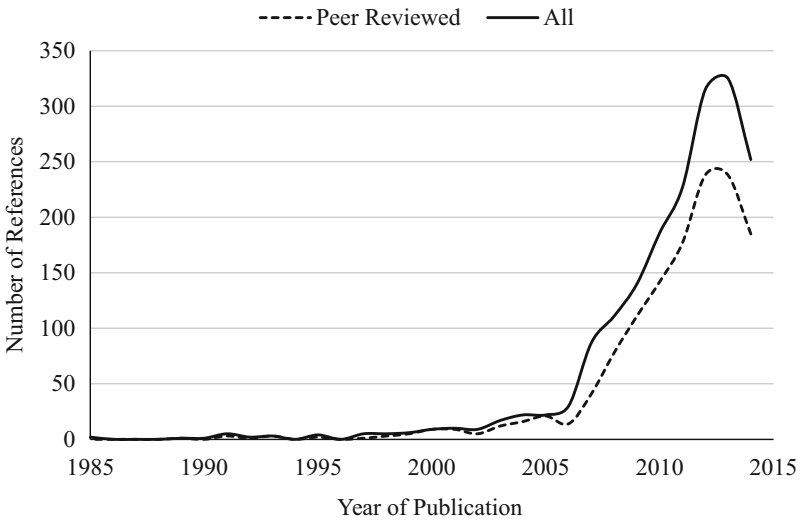

Fig. 10.1 PsycINFO references on "climate change" or "global warming" from 1985 to 2014

Climate change and its link to social identity are particularly relevant to peace psychology for at least two reasons. The first is that climate change reflects underlying *structural violence* against social groups and the natural environment (Pilisuk, 1998). Climate change emerges from the unsustainable extraction and consumption of natural resources that people depend upon for meeting their basic needs. In effect, climate change is slowly harming people by making it even more difficult for them to sustain the conditions necessary for physical and psychological well-being, particularly among the most vulnerable populations around the world (Doherty & Clayton, 2011). This means that incorporating climate change into peacebuilding programmes has become a necessary task in our warming world (Matthew, 2014). In addition, as groups struggle more and more to fulfil their needs, this increases the potential for *episodic violence*—quick and dramatic harms that result in considerable displacement, suffering, and fatalities (Christie, 2006). Indeed, it is not possible to develop a lasting peace without protecting the environment (Winter, 2003).

Nevertheless, there is still a need for psychology to cultivate a deeper, more integrative discussion about climate change. In particular, the field still lacks parsimonious and integrative theoretical models to fully engage researchers, policymakers, and the public more generally. Clayton (2012) points out that more integrated theory across psychology and other disciplines is a necessary step forward. Fielding, Hornsey, and Swim (2014) also suggest that now is the time to integrate social psychological knowledge on climate change with current climate models in other disciplines. We argue that the social identity perspective can make important contributions to the wider efforts of psychologists to develop stronger theoretical models and more effective interventions for climate change. This perspective has already made valuable contributions to areas such as organisational (e.g. Haslam & Ellemers, 2011) and

health psychology (e.g. Jetten, Haslam, Haslam, Dingle, & Jones, 2014). Indeed, the social identity perspective is beginning to make important contributions to environmental psychology and, more specifically, climate change (Fielding, Terry, Masser, & Hogg, 2008; Postmes, 2015; Rabinovich & Morton, 2011).

In this chapter, we outline a social identity perspective on addressing global climate change. We begin by highlighting the differences between individualistic and social identity approaches to climate change. We then describe how a social identity perspective offers novel insights in the two primary kinds of intervention in environmental psychology—*informational interventions* that encourage personal behaviour change by providing informative or persuasive, sustainability-relevant messages, and *structural interventions* that promote collective behaviour change by creating new sustainability policies for corporate or government institutions. Finally, we discuss the broader implications of a social identity perspective for environmental and peace psychology, as well as for interventions to reduce the antecedents and consequences of climate change for social groups and the natural environment.

Psychological Perspectives on Global Climate Change

Individualistic Perspectives

The psychology of climate change and environmental issues more generally has traditionally been dominated by individualistic perspectives, which are based on three core principles. First, *people are generally motivated by their self-interest*. Indeed, environmental psychologists often focus on a wide range of internal motivations—including attitudes, beliefs, biases, goals, habits, needs, and values. Such motives are the predominant predictors of behaviour in the key theoretical models in the field, such as the Theory of Planned Behaviour (TPB), Norm Activation Model (NAM), Value-Belief-Norm Theory (VBN), and Goal Framing Theory (GFT; see Steg & Nordlund, 2013 for a review). For instance, the NAM suggests that personal norms (i.e. feeling obligated to protect the environment) motivate sustainable behaviour, and outlines variables that promote their activation (such as problem awareness and a sense of efficacy for environmental change). When theoretical models emphasise internal motivations for climate-relevant actions, they generally suggest increasing personal responsibility (Frantz & Mayer, 2009) and behavioural self-regulation (Bamberg, 2013) to encourage sustainable outcomes.

Second, *people are generally resistant to psychological and behavioural change*. From an individualistic perspective, internal motivations are considered relatively fixed and stable entities within individuals, whether grounded in their biological tendencies or previous conditioning. For instance, Steg, Bolderdijk, Keizer, and Perlaviciute (2014) point out that values are thought to

be relatively stable and enduring, transcending situations and affecting a variety of motivations and behaviours. Similarly, Klockner and Verplanken (2013) suggest that stability is one of the core features of habit-driven behaviour. Since internal motives are relatively stable, people cope with change by psychologically and behaviourally resisting its occurrence. Additionally, resistance to change is seen as a fact that should be harnessed or redirected in psychological interventions. For instance, van Vugt, Griskevicius, and Schultz (2014) propose that humans' inherent self-interest could be redirected by developing sustainable programming that results in direct personal gains, such as protecting people's ability to pass genetic material into the future. Thus, individualistic interventions generally emphasise accommodation of internal motivations, rather than directly working to counteract them.

Third, *social groups generally represent external motivations acting upon individuals*. In effect, social groups are seen as problematic when it comes to developing effective interventions for a couple of reasons. Since people are driven by self-interest, they are only likely to prioritise collective interests in a limited range of situations. For instance, Schultz (2014) outlined a number of behaviour change strategies and suggested that the group-related ones (such as social norms) will be most effective when there are few perceived benefits and barriers to performing behaviour. Moreover, since people's internal motivations are assumed to be resistant to change, collective interests are unlikely to serve as stable motivators, even in these limited situations. For instance, Lindenberg and Steg (2014) suggest that group-related change strategies (such as norm-guided actions) are precarious because they require wider support, are undermined by deviance, and their effects typically decay over time. From an individualistic perspective, social groups do not represent a viable focus for interventions because they are—like the other external motives that confront individuals—weak, unstable, and likely to elicit individual resistance to change.

Social Identity Perspectives

Despite the historically individualistic focus of environmental psychology, social identity perspectives are increasingly represented in research on climate change. These perspectives are also based on three principles. First, *motivation is not solely determined by self-interest, but rather is an outcome of self-categorisation processes*. From a social identity perspective, it is problematic to explain behaviour in terms of personal self-interest because people can categorise themselves as individuals (i.e. personal identities) or as group members (i.e. social identities). The importance of group membership for motivation is consistent with neuroscience research showing that our brain regions are adapted for developing and maintaining group bonds, rather than for simply pursuing self-interests (Lieberman, 2013). Furthermore, self-categorisation is context dependent. When people self-categorise as group members, they focus on their shared, collective

interests, rather than their personal self-interests. In these contexts, in-group norms are self-defining and motivate collective behaviours to positively differentiate the in-group from relevant out-groups (Reynolds, Subasic, & Tindall, 2015).

Second, *when the context changes, self-categorisation can change as well*. This means that people could resist or support possible change depending on the identity salient in a given comparative context. From a social identity perspective, it is problematic (and pessimistic) to characterise people as resistant to change because this does not explain the conditions under which resistance occurs, nor does it explain how the conditions that will spark support for change come about. As Reynolds and Branscombe (2015) point out, people do not exist as separate from culture, nature, or history, and their motivations are variable depending on the social identity that is salient in a given context. Thus, when the comparative context is stable, self-categorisation is likely to remain stable and people are likely to be relatively resistant to behavioural change. However, when the context is unstable, self-categorisation will likely change and people will be open to new behavioural options in line with shifts in their self-categorisation (Reynolds et al., 2015). When particular identities are consistently made salient, people will be more resistant to change, although it is not necessary, nor sufficient, to appeal to relatively fixed internal motives to explain behavioural stability.

Third, *social groups provide a frame of reference for motivation and behaviour*. From a social identity perspective, it is problematic to suggest that collective interests are a limited or unstable source of motivation (Reynolds & Branscombe, 2015). In fact, self-interests are only self-relevant and self-defining in *intragroup contexts*—where comparisons between individuals and in-group members become salient. In these contexts, personal identities can be recognised and challenged by prototypical (i.e. higher status) in-group members. Such challenges help to motivate personal change. Furthermore, group interests are only self-relevant and self-defining in *intergroup contexts*—where comparisons between in-groups and out-groups become salient. In these contexts, collective identities can be recognised and challenged by prototypical in-group members. Such challenges help to motivate collective change. Given the inherently global and intergroup nature of climate change, it is clear that understanding and harnessing the power of collective interests will be critical to successful efforts to address this important issue. In effect, interventions developed without due attention to group memberships are themselves precarious, as they neglect the frame of reference that is most likely behind the collective behaviour change needed to address climate change.

Delivering Information for Personal Behaviour Change

Individualistic Perspectives

Environmental psychologists have long sought to change personal behaviours that affect sustainable outcomes. The key interventions employed to do so are informational interventions wherein communicators deliver messages to audiences to

foster the reduction of unsustainable behaviours in favour of sustainable ones. Such interventions are often premised on the notion that people have a *knowledge deficit*—that people either lack knowledge about the issue of climate change or about the potential strategies for mitigation and adaptation to it. Therefore, providing information is thought to remediate this deficit and promote an increase in sustainable behaviour. According to Schultz (2002), the simple provision of information is particularly helpful when a new intervention programme is initiated, when there is a change to a current programme, or when a programme is particularly complex for the audience.

Although the knowledge-deficit approach has its share of critics, most informational interventions continue to assume that information is critical for changing personal sustainability behaviours. For instance, social marketing interventions (Maibach, Leiserowitz, Roser-Renouf, & Mertz, 2011; McKenzie-Mohr, 2011) promote sustainable behaviour by segmenting audiences and targeting particular behaviours within them. This allows communicators to make messages more accessible and to focus audience attention on behaviours that make a significant contribution to sustainable outcomes. Additionally, tailored information interventions (Abrahamse, Steg, Vlek, & Rothengatter, 2007) encourage sustainability by fitting messages to the unique attributes of audiences—their distinct motivations and barriers to individual behaviour change. This allows communicators to reduce the information overload arising from exposure to multiple behaviour change messages (van der Werff & Steg, 2015). Through targeting and tailoring messages to particular audiences, individualistic interventions attempt to decrease knowledge deficits or accommodate inherent biases that undermine behaviour change.

One challenge for individualistic interventions is that people will undoubtedly distrust some communicators and their informational messages. This means that messages will need to be shaped to maximise the acceptance of preferred behavioural changes. Hence, environmental psychologists have developed a variety of informational strategies (APA, 2009). One strategy is to suggest that preferred climate behaviours are personally beneficial in some manner, such as providing additional leisure time or unrecognised financial incentives. For instance, Lanzini and Thogersen (2014) found that providing people with financial incentives elicited more sustainable purchasing behaviours than providing them with encouragement and praise. Another strategy is to suggest that preferred behaviours are easy and effective solutions for climate change. For instance, Lanzini and Thogersen also found that financial incentives increased the performance of low-effort behaviours, such as energy and water conservation. By highlighting personal benefits, such as monetary compensation or convenience, interventions enhance internal motivations for personal behaviour change to help address climate change.

The challenge of distrust also means that messages will need to be shaped to maximise the rejection of current, unsustainable behaviours. Indeed, van Vugt et al. (2014) suggest that people are unlikely to discontinue such behaviours because sustainability threats are harder to perceive (see, touch, etc.), particularly for slow-moving, temporally distant, and global issues. Accordingly, environmental psychologists have recommended that climate change messages

should be delivered in a personal, tangible, and vivid manner (Moser, 2014). For instance, Leiserowitz (2007) discusses a number of strategies for communicating climate change risks: presenting them as a clear and immediate threat, outlining the local and regional consequences, highlighting impacts on weather and health, and openly discussing uncertainties in predictions. Although such strategies could overcome human biases by making climate change seem more real, they could also raise other concerns associated with uncertainty and fear-based messages. For instance, Fritsche, Cohrs, Kessler, and Bauer (2012) found that people exposed to climate threats (e.g. heatwaves and wildfires) reported stronger authoritarian and system-justifying attitudes than those exposed to neutral climate information (e.g. climate and geography facts).

Social Identity Perspectives

From the social identity perspective, personal change is not viewed as an outcome of targeting, tailoring, and delivering information. Instead, behavioural change is an outcome of the changing context—shifting comparisons between individuals and their social groups provide the impetus for personal change. In fact, information does not have a fixed or objective meaning, but rather is infused with meaning by perceivers in a particular comparative context. This helps us to explain why information is received and acted upon differently across contexts. For instance, Swim and Becker (2012) found that Germans were more willing than Americans to conserve energy, in part because of stronger biospheric and ethical (vs. egoistic and cost-oriented) concerns. Additionally, Whitmarsh and O'Neill (2010) found that "carbon offsetter" identity remained a strong predictor of sustainable intentions, over and above most theory of planned behaviour predictors (i.e. norms and control). A social identity perspective suggests that meaning is not an inherent property of objective information or unique individuals, but rather is a context-dependent outcome of self-categorisation processes.

Furthermore, the meaning of information varies as a function of salient social identities and its relevance for in-group norms (Reynolds et al., 2015). For instance, Seyranian, Sinatra, and Polikoff (2015) conducted an intervention on water conservation in an affluent neighbourhood in California. Participants were presented with four sets of information: knowledge deficit (water saving tips), personal identity (encouragement to reduce water use laden with singular pronouns of "I" and "you"), social identity (similar to personal but with plural pronouns of "we" and "us"), and social norms (descriptive and injunctive information about household water use relative to a neighbourhood mean). Participants exposed to knowledge-deficit messages reported greater water use than participants in the other conditions. Given the centrality of sustainability for Californian identity, it is perhaps unsurprising that the other messages revealed similar results—when norms are highly legitimised, they increase the correspondence between personal and in-group identities. Indeed, Masson and Fritsche (2014) found that highly self-invested participants reported stronger climate-friendly intentions as a function of sustainable group norms, particularly for challenging climate-friendly behaviours.

From a social identity perspective, trust in communicators and their messages depends on whether the promoted behaviours are seen as prototypical for in-group members. This suggests that interventions need to maximise the prototypicality of preferred behavioural changes. For instance, Schultz and Fielding (2014) examined attitudes toward recycled drinking water in Queensland, Australia. At Time 1, participants completed measures of perceived knowledge and risk of recycled water, as well as positive emotions and acceptance toward it. At Time 2, participants received information about the recycling process that varied the communicator's salient identity. The communicator was presented as a scientist from South East Queensland (a superordinate identity) or as a scientist without mention of their regional affiliation (an unknown identity). For participants who strongly identified with South East Queensland, the superordinate intervention reduced perceived risk, increased positive emotions, and enhanced the acceptability of recycled drinking water at Time 2. Thus, increasing communicator prototypicality increased favourability toward recycling water. This is consistent with Rees and Bamberg's (2014) study showing that the relationship between neighbourhood identification and intentions to participate in collective climate action is mediated by stronger in-group norms of climate engagement.

The social identity view also suggests that informational interventions need to maximise the perception that unsustainable behaviours are now peripheral (i.e. no longer reflect in-group norms) and could elicit rejection from other group members (Jetten, Branscombe, & Spears, 2006). For instance, Morton, Bretschneider, Coley, and Kershaw (2011) found that increased seniority among engineers was related to more entrenched company norms against sustainable policies. This implies the necessity of making unsustainable practices more peripheral to foster sustainable change. Indeed, emphasising the non-prototypicality of behaviours could even bolster sustainability. For instance, McDonald, Newell, and Denson (2014) had participants review a list of 26 sustainable behaviours and either circle behaviours that they would be willing to perform (an inclusion mindset) or cross out behaviours that they would not be willing to perform (an exclusion mindset). Participants who crossed out sustainable behaviours (i.e. excluded them as "peripheral" based on norms of perceived difficulty) reported increased willingness to perform the remaining behaviours (i.e. viewed them as more prototypical) than participants who circled them. In effect, focusing on the peripheral status of some group behaviours makes others seem more prototypical (e.g. easier to do) and thereby increases willingness to perform sustainable behaviours (i.e. they seem more desirable).

Structuring Policies for Collective Behaviour Change

Individualistic Perspectives

Environmental psychologists have also sought to change collective behaviours that shape sustainable outcomes. The primary interventions employed to do so are structural interventions wherein policymakers create and institute in-group

policies (e.g. corporations and governments) that regulate collective behaviours. Such interventions are often premised on the notion of social dilemmas—contexts in which short-term, personal interests are pitted against long-term, group interests. For instance, Hardin's (1968) "tragedy of the commons" outlines how rational actors' consumption of shared resources can eventually result in their depletion or degradation. Hence, individuals who continue to consume resources initially receive larger payoffs, but in the long run the collective receives smaller payoffs as resources are destroyed. This is particularly true when a greater number of individuals choose to act in terms of their self-interests, rather than their collective interests.

Accordingly, most individualistic interventions involve developing strategies to enhance environmental policies that would otherwise be resisted because of their impact on self-interest. One common strategy is based on applied behavioural analysis (i.e. a conditioning or learning approach), which attempts to shape observable behaviours by modifying their antecedents or consequences. For instance, Schultz and Kaiser (2012) discuss the use of prompts and contingencies to change behaviour. Prompts are messages that people are exposed to prior to a behaviour, such as "Please turn off the lights". When prompts are properly structured—clear, simple, positive, or in close proximity to behaviour—they facilitate performance of preferred behaviours. Contingencies are rewards (such as rebates or tax breaks) and punishments (such as fines or energy costs) for the performance of behaviours. Despite concerns about the higher costs of the applied behavioural approach, providing rewards after behaviours seems to increase them, whereas providing punishments after behaviours seems to decrease them. As a result, creating effective policies is seen as a matter of finding the right mix of rewards and punishments that accommodate self-interested human nature, in the service of long-term collective interests.

The challenge for individualistic interventions is that people could feel disrespected (or even manipulated) by policymakers and their policies (Mols, Haslam, Jetten, & Steffens, 2015). This means that social policies will need to be structured to maximise support within relevant constituencies. Bolderdijk, Lehman, and Geller (2013) suggest employing rewards rather than punishments as a way to lessen resistance to policy changes. Rewards could include monetary consequences, but they could include non-monetary ones as well (such as special privileges or public recognition). Additionally, Bolderdijk et al. advise that people prefer "soon and certain" rewards over "distant and uncertain" ones. Indeed, soon and certain rewards appear to activate brain regions linked to motivation, while distant and uncertain ones appear to activate regions linked to behavioural self-regulation (McClure, Laibson, Loewenstein, & Cohen, 2004). Thus, individualistic interventions imply that policymakers should develop and advocate incentive structures with a clear procedure and timeline for rewarding sustainable change.

The challenge of disrespect also means that policies should be structured to maximise opposition to the current, unsustainable policies. This could involve framing the penalties in a favourable manner. For instance, Hardisty, Johnson, and Weber (2010) conducted studies about the labelling of carbon emission surcharges

on products (e.g. carbon offsets on airfare) for key political parties in the United States—Republicans, Independents, and Democrats. They found that labelling products as "carbon offsets" rather than "carbon taxes" significantly increased the proportion of Republicans and Independents choosing the more expensive, sustainable policies. This could also involve adding rewards to compensate for the penalties in the policy packages. For instance, Garling and Schuitema (2007) reviewed transportation policies, such as reducing car use to improve urban problems (e.g. traffic congestion or air pollution). They suggest that adding incentives, such as improved public transportation or new tax breaks, could bolster the acceptability of transport policies. This means that penalties for unsustainable behaviour could prove effective when they are at least somewhat supportive of our individual self-interests.

Social Identity Perspectives

The social identity perspective suggests that collective behaviour change is not an outcome of structuring policies with the right mix of rewards and punishments. Instead, change represents an outcome of the intergroup context—changes in comparisons between in-groups and out-groups provide the impetus for collective change. Indeed, consequences do not have a fixed or objective meaning, but depend on the comparative context. This helps explain why policies are received or acted upon differently across contexts. For instance, Peters and Steffens (see Haslam & Reicher, 2012) found that self-identified "environmentalists" saw President Obama's 2009 Copenhagen speech as more charismatic when his policies were portrayed as helping the United States meet its emissions targets, than when they were portrayed as not helping meet its targets. Moreover, Bain, Hornsey, Bongiorno, and Jeffries (2012) found that climate change deniers were more willing to support sustainable behaviours when doing so was portrayed as supporting economic or technological development, rather than as avoiding the risks of climate change. A social identity view suggests that meaning is not an inherent property of rewards/punishments or unique social groups, but rather is a context-dependent outcome of self-categorisation processes.

Furthermore, the meaning of policy packages varies as a function of salient identities and their relevance to in-group norms (Mols et al., 2015). For instance, Unsworth and Fielding (2014) manipulated political identity salience among liberals and conservatives, and then measured their beliefs about climate change and support of government policies to mitigate climate change. The salience of political identity reduced conservatives' belief in anthropogenic climate change, as well as their support of government policies (such as a carbon tax) to mitigate climate change. Salience had no effect on liberals who reported strong climate-friendly beliefs and support across conditions. In addition, Rabinovich, Morton, Postmes, and Verplanken (2011) varied the intergroup context to examine its influence on sustainable behaviour. In their work, British participants

were asked to write down the ways that being British differed from being Swedish (an upward climate action comparison) or from being American (a downward climate comparison). They were then asked about their willingness to contact politicians and take climate action flyers. Participants who compared themselves to Americans reported more willingness to contact their politicians and took more flyers than participants who compared to Swedish citizens. In effect, the same policymakers and policies took on different meanings as a function of salient group identities, and their associated self-stereotypes and in-group norms.

From a social identity perspective, feeling respected by policymakers and their policies depends on whether promoted behaviours are viewed as prototypical for in-group members. This suggests that interventions need to enhance the prototypicality of policy initiatives. For instance, Bliuc et al. (2015) examined intergroup conflict between climate sceptics and believers, and its influence on sustainable intentions and donations. They found that opinion group identification predicted intentions and donations for both sceptics and believers. These findings show that self-categorisation and behavioural prototypicality play a meaningful role in climate policy-relevant behaviours. Additionally, Seyranian (2014) examined whether leaders' use of inclusive language (such as "we" and "us") would increase the prototypicality of leaders and their policies, as well as sustainable intentions, in the context of promoting renewable energy on a university campus. Participants in the inclusive (vs. noninclusive) language condition rated leaders more positively, perceived renewable energy as more in-group normative, and reported stronger intentions to get involved in renewable energy action on campus. Taken together, these studies suggest that greater prototypicality of policymakers and policies encourages pro-climate intentions and behaviour.

A social identity perspective also suggests that structural interventions should maximise the perception that unsustainable practices are now peripheral (i.e. no longer represent in-group norms) and could elicit rejection from other group members. For instance, Sheldon, Nichols, and Kasser (2011) examined the influence of identity salience and content on recommended carbon footprints in the United States. They exposed participants to three identities without explicitly mentioning identity content (Missouri student, human, or American) and one identity (American) explicitly mentioning content as prototypical (e.g. expressive and generous) or peripheral (e.g. selfish and materialistic). Participants then read about carbon footprints and how they harm the environment, as well as completed measures of their recommendations for Americans' carbon footprints (related to travel, housing, and food). Participants in the prototypical identity condition recommended deeper reductions in Americans' footprints than those in the other four conditions. Similarly, Feygina, Jost, and Goldsmith (2010) found that system justifiers were more likely than non-system justifiers to report pro-climate intentions and action when portrayed as preserving American culture. This suggests that stressing the peripheral in-group status of unsustainable behaviour could be a useful avenue to promoting collective change.

Implications of a Social Identity Perspective

Moving Beyond Individualistic Views

The historical prevalence of individualistic views in climate change research is steadily giving way to social identity perspectives. There are at least three benefits of moving to a social identity perspective. The first is that social identity perspectives *encourage deeper integration of psychological knowledge* than is possible with individualistic views. For instance, individualistic perspectives treat individuals and groups as if they were distinct and separate. This leads the field to accumulate knowledge about them in relatively isolated academic "silos" (Gifford, 2009). In fact, one important difference between environmental psychology and peace psychology is the broader emphasis on collective processes in the latter. Social identity perspectives encourage us to integrate knowledge across different levels of analysis in order to deepen our understanding of global and intergroup issues such as climate change (Batalha & Reynolds, 2012). The social identity perspective on "individuals as in-group members" offers us a novel starting point for empirical research, as well as a comprehensive, parsimonious, and generalisable account of global climate change—beyond individual behaviour in individualistic countries (Branscombe & Reynolds, 2015; Jetten, McAuliffe, Hornsey, & Hogg, 2006).

The second benefit of moving to a social identity perspective is that it *offers a strong potential for challenging the unsustainable status quo* compared to individualistic views. For instance, individualistic views focus attention on "stable individuals" over "unstable groups" as targets for intervention (e.g. Lindenberg & Steg, 2014). When psychological views emphasise self-interest, personal responsibility, and self-regulation, they repeatedly make personal identities salient, thus recreating the personal stability that they presuppose (Reynolds & Branscombe, 2015). They also minimise attention to the upstream variables that generate the structural violence behind climate change (Christie, 1997). Thus, individualistic views could unwittingly support the unsustainable status quo by focusing on outcomes—rather than causes—of structural violence (Haslam, 2014). Social identity perspectives highlight the comparative context and its potential for creating new opportunities for personal and collective change. Stability and change cannot represent implicit assumptions within perspectives, but must be theoretically explained and empirically tested. If groups rather than individuals are our human default (Lieberman, 2013), we should spend more time on what keeps us apart, rather than on what brings us together (Turner & Reynolds, 2010).

The third benefit of moving to a social identity perspective is that it *provides greater political sensitivity* than individualistic views. For instance, individualistic perspectives seem to treat interventions as if they were mostly about changing individual behaviours (e.g. Steg et al., 2014). The difficulty is that interventions are actually based on underlying social identities—those held by interventionists and their targeted populations (Mols et al., 2015). This means that interventions are inherently political because they mobilise particular identities and demobilise

others (Haslam, 2014). The "tragedy of the commons" is not a matter of clever incentives, but rather of salient group identities (Kramer & Brewer, 1984). From a social identity perspective, interventions necessarily involve promoting and managing relevant identities. Interventionists need to recognise that their choice of strategies is not simply about their approach (individual, technological, etc.), but also about their support for certain in-group identities (Haslam, 2014). Indeed, effective climate change interventions must acknowledge and manage the competing identities related to sustainability (Batalha & Reynolds, 2012; Rabinovich & Morton, 2011).

Principles for Climate Peacebuilding

The social identity perspective illuminates a number of new strategies and techniques for communicators and policymakers interested in creating effective, psychological interventions to promote climate change mitigation and adaptation. There are at least three general principles to keep in mind when developing social identity-informed interventions. The first is that *fostering personal change likely involves perceptions of emerging in-group norms* (Reynolds et al., 2015). While researchers are focused on individuals and promotion of sustainable behaviour, they are not focused on why people are cooperating with unsustainable group practices, nor what encourages them to stop cooperating with these practices. One possibility is that people simply perceive that their in-group norms are becoming increasingly sustainable, and they stop cooperating to become prototypical in-group members (Ferguson, Branscombe, & Reynolds, 2011). As in-group opinion leaders, people can highlight and challenge the unsustainable personal identities of other group members to elicit acceptance of emerging norms (Platow, Haslam, Reicher, & Steffens, 2015). Thus, informational interventions could be particularly useful for encouraging non-cooperation with unsustainable practices. This is particularly so given that structural violence relies upon a mix of ignorance and complicity to maintain support for environmental damage and injustices (Christie & Noor, 2012).

The second principle is that *collective change likely involves the embedding of in-group norms into everyday policies and practices* (Haslam, Reicher, & Platow, 2015). This means that it is important to understand how specific norms become and remain prototypical within groups. Indeed, social group discourse is generally infused with multiple norms, and opinion leaders are motivated to establish certain ones as most representative of prototypical in-group behaviour (e.g. McDonald, Fielding, & Louis, 2013; Smith et al., 2012; Subasic, Reynolds, & Mohamed, 2015). Such discourse invariably highlights and challenges the current social identity with competing visions for the in-group's future behaviours (Reicher & Haslam, 2012). This also means that it is important to construct policies that promote the prototypicality of environmental sustainability. Given that structural violence is perpetuated by ignoring and marginalising alternative in-group voices (Christie, Tint, Wagner, & Winter, 2008), it is important to be as inclusive as is possible when

developing policies and during any subsequent negotiations (Batalha & Reynolds, 2012). Nonetheless, should sustainable in-group norms become marginalised during this process, their supporters could consider participating in non-violent actions to contest the established policies (Pilisuk, 1998; Schwebel, 2006).

The third principle is that *identity leadership fosters change by shaping the comparative context* (Haslam et al., 2015). Prototypical in-group members can encourage personal change by modifying the intragroup context (Branscombe & Reynolds, 2015). By developing and refining in-group norms around climate-friendly behaviour, these opinion leaders can build acceptance of the emerging group identity. They can begin to create a novel future that in-group members can embrace in their everyday lives. Additionally, group leaders can promote collective change by shaping the intergroup context. By positioning sustainability as part of what makes the in-group distinct (i.e. relative to important out-groups), climate-friendly behaviours become more readily includable within group policies. Leaders can mobilise support for novel in-group identities in institutional policies, which helps members to live out sustainable identities in the world. This dual emphasis on changing intragroup and intergroup prototypicality in context facilitates the emergence and establishment of new in-group identities (Reicher & Haslam, 2012). This view challenges the historic notion that people are beholden to their biological capacities and social conditioning, but rather can, and do, change in order to pursue a brighter in-group future (Bain, Hornsey, Bongiorno, Kashima, & Crimston, 2013; Reynolds & Branscombe, 2015).

Overall, the advantage of a social identity perspective is that it helps environmental and peace psychologists to see that climate change is a clear threat to lasting peace in the world. By conducting research and developing interventions that challenge the structural violence behind climate change, psychologists can help to mitigate the direct violence that occurs when people cannot meet their basic needs. The normalised depletion and degradation of natural resources remains one of the major challenges for personal and collective well-being in the world today. Although we might currently have the luxury of peacebuilding rather than peacemaking, this luxury will quickly disappear in our gradually warming world.

References

Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2007). The effect of tailored information, goal setting, and tailored feedback on household energy use, energy-related behaviours, and behavioural antecedents. *Journal of Environmental Psychology, 27*, 265–276. doi:10.1016/j.jenvp.2007.08.002

American Psychological Association. (2009). *Psychology and global climate change: Addressing a multifaceted phenomenon and set of challenges*. Washington, DC: American Psychological Association.

Bain, P. G., Hornsey, M. J., Bongiorno, R., Kashima, Y., & Crimston, D. (2013). Collective futures: How projections about the future of society are related to actions and attitudes supporting social change. *Personality and Social Psychology Bulletin, 39*, 523–539. doi:10.1177/0146167213478200

Bain, P. G., Hornsey, M. J., Bongiorno, R., & Jeffries, C. (2012). Promoting pro-environmental action in climate change deniers. *Nature Climate Change, 2*, 600–603. doi:10.1038/nclimate1532

Bamberg, S. (2013). Changing environmentally harmful behaviours: A stage model of self-regulated behavioural change. *Journal of Environmental Psychology, 34*, 151–159. doi:10.1016/j.jenvp.2013.01.002

Batalha, L., & Reynolds, K. J. (2012). ASPIRing to mitigate climate change: Superordinate identity in global climate negotiations. *Political Psychology, 33*, 743–760. doi:10.1111/j.1467-9221.2012.00896.x

Bender, L. (Producer), & Guggenheim, D. (Director). (2006). *An inconvenient truth* [Motion Picture]. Hollywood, CA: Paramount.

Bliuc, A. M., McGarty, C., Thomas, E. F., Lala, G., Berndsen, M., & Misajon, R. (2015). Public division about climate change rooted in conflicting socio-political identities. *Nature Climate Change, 5*, 226–229. doi:10.1038/nclimate2507

Bolderdijk, J. W., Lehman, P. K., & Geller, E. S. (2013). Encouraging pro-environmental behaviour with rewards and penalties. In L. Steg, A. E. van den Berg, & J. I. M. de Groot (Eds.), *Environmental psychology: An introduction* (pp. 233–242). Malden, MA: Blackwell.

Branscombe, N. R., & Reynolds, K. J. (2015). Toward person plasticity: Individual and collective approaches. In K. J. Reynolds & N. R. Branscombe (Eds.), *Psychology of change: Life contexts, experiences and identities* (pp. 3–24). New York: Psychology Press.

Christie, D. J. (1997). Reducing direct and structural violence: The human needs theory. *Peace and Conflict: Journal of Peace Psychology, 3*, 315–332. doi:10.1207/s15327949pac0304_1

Christie, D. J. (2006). What is peace psychology the psychology of? *Journal of Social Issues, 62*, 1–17. doi:10.1111/j.1540-4560.2006.00436.x

Christie, D. J., & Noor, N. M. (2012). Internationalizing peace psychology. In F. T. L. Leong, W. E. Pickren, M. M. Leach, & A. J. Marsella (Eds.), *Internationalizing the psychology curriculum in the United States* (pp. 285–305). New York: Springer.

Christie, D. J., Tint, B. S., Wagner, R. V., & Winter, D. D. (2008). Peace psychology for a peaceful world. *American Psychologist, 63*, 540–552. doi:10.1037/0003-066X.63.6.540

Clayton, S. (2012). Conclusions: Directions for the future. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 673–683). New York: Oxford University Press.

Clayton, S., Devine-Wright, P., Stern, P. C., Whitmarsh, L., Carrico, A., Steg, L., et al. (2015). Psychological research and global climate change. *Nature Climate Change, 5*, 640–646. doi:10.1038/nclimate2622

Clayton, S., Manning, C., & Hodge, C. (2014). *Beyond storms and droughts: The psychological impacts of climate change*. Washington, DC: American Psychological Association and Eco-America.

Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C., & Vandenbergh, M. P. (2009). Household actions can provide a behavioural wedge to rapidly reduce US carbon emissions. *Proceedings of the National Academy of Sciences of the United States of America, 106*, 18452–18456. doi:10.1073/pnas.0908738106

Doherty, T. J., & Clayton, S. (2011). The psychological impacts of global climate change. *American Psychologist, 66*, 265–276. doi:10.1037/a0023141

Ferguson, M. A., Branscombe, N. R., & Reynolds, K. J. (2011). The effect of intergroup comparison on willingness to perform sustainable behaviour. *Journal of Environmental Psychology, 31*, 275–281. doi:10.1016/j.jenvp.2011.04.001

Feygina, I., Jost, J. T., & Goldsmith, R. E. (2010). System justification, the denial of global warming, and the possibility of "system-sanctioned change". *Personality and Social Psychology Bulletin, 36*, 326–338. doi:10.1177/0146167209351435

Fielding, K. S., Hornsey, M. J., & Swim, J. K. (2014). Developing a social psychology of climate change. *European Journal of Social Psychology, 44*, 413–420. doi:10.1002/ejsp.2058

Fielding, K. S., Terry, D. J., Masser, B. M., & Hogg, M. A. (2008). Integrating social identity theory and the theory of planned behaviour to explain decisions to engage in sustainable agricul-

tural practices. *British Journal of Social Psychology, 47*, 23–48. doi:10.1348/014466607x206792

Frantz, C. M., & Mayer, F. S. (2009). The emergency of climate change: Why are we failing to take action? *Analyses of Social Issues and Public Policy, 9*, 205–222. doi:10.1111/j.1530-2415.2009.01180.x

Fritsche, I., Cohrs, J. C., Kessler, T., & Bauer, J. (2012). Global warming is breeding social conflict: The subtle impact of climate change threat on authoritarian tendencies. *Journal of Environmental Psychology, 32*, 1–10. doi:10.1016/j.jenvp.2011.10.002

Garling, T., & Schuitema, G. (2007). Travel demand management targeting reduced private car use: Effectiveness, public acceptability and political feasibility. *Journal of Social Issues, 63*, 139–153. doi:10.1111/j.1540-4560.2007.00500.x

Gifford, R. (2009). Environmental psychology: Manifold visions, unity of purpose. *Journal of Environmental Psychology, 29*, 387–389. doi:10.1016/j.jenvp.2009.09.002

Hardin, G. (1968). The tragedy of the commons. *Science, 162*, 1243–1248. doi:10.1126/science.162.3859.1243

Hardisty, D. J., Johnson, E. J., & Weber, E. U. (2010). A dirty word or a dirty world? Attribute framing, political affiliation, and query theory. *Psychological Science, 21*, 86–92. doi:10.1177/0956797609355572

Haslam, S. A. (2014). Making good theory practical: Five lessons for an applied social identity approach to challenges of organizational, health, and clinical psychology. *British Journal of Social Psychology, 53*, 1–20. doi:10.1111/bjso.12061

Haslam, S. A., & Ellemers, N. (2011). Identity processes in organizations. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (Vol. 2, pp. 715–744). New York: Springer.

Haslam, S. A., & Reicher, S. D. (2012). In search of charisma. *Scientific American Mind, 23*, 42–49. doi:10.1038/scientificamericanmind0712-42

Haslam, S. A., Reicher, S. D., & Platow, M. J. (2015). Leadership: Theory and practice. In M. Mikulincer & P. R. Shaver (Eds.), *APA handbook of personality and social psychology* (Vol. 2, pp. 67–94). Washington, DC: American Psychological Association.

Hsiang, S. M., Burke, M., & Miguel, E. (2013). Quantifying the influence of climate on human conflict. *Science, 341*, 1235367. doi:10.1126/science.1235367

Intergovernmental Panel on Climate Change. (2014). *Climate change 2014: Synthesis report.* Contributions of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland.

Jetten, J., Branscombe, N. R., & Spears, R. (2006). Living on the edge: Dynamics of intragroup and intergroup rejection experiences. In R. Brown & D. Capozza (Eds.), *Social identities: Motivational, emotional and cultural influences* (pp. 92–107). New York: Psychology Press.

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., & Jones, J. M. (2014). How groups affect our health and well-being: The path from theory to policy. *Social Issues and Policy Review, 8*, 103–130. doi:10.1111/sipr.12003

Jetten, J., Haslam, S. A., Iyer, A., & Haslam, C. (2010). Turning to others in times of change: Social identity and coping with stress. In S. Sturmer & M. Snyder (Eds.), *The psychology of prosocial behaviour: Group processes, intergroup relations, and helping* (pp. 139–156). Malden, MA: Blackwell.

Jetten, J., McAuliffe, B. J., Hornsey, M. J., & Hogg, M. A. (2006). Differentiation between and within groups: The influence of individualist and collectivist group norms. *European Journal of Social Psychology, 36*, 825–843. doi:10.1002/ejsp.322

Karlin, B., Davis, N., Sanguinetti, A., Gamble, K., Kirkby, D., & Stokols, D. (2014). Dimensions of conservation: Exploring differences among energy behaviours. *Environment and Behaviour, 46*, 423–452. doi:10.1177/0013916512467532

Klockner, C. A., & Verplanken, B. (2013). Yesterday's habits preventing change for tomorrow? The influence of automaticity on environmental behaviour. In L. Steg, A. E. van den Berg, &

J. I. M. de Groot (Eds.), *Environmental psychology: An introduction* (pp. 197–209). Malden, MA: Blackwell.

Kramer, R. M., & Brewer, M. B. (1984). Effects of group identity on resource use in a simulated commons dilemma. *Journal of Personality and Social Psychology, 46*, 1044–1057. doi:10.1037/0022-3514.46.5.1044

Lanzini, P., & Thogersen, J. (2014). Behavioural spillover in the environmental domain: An intervention study. *Journal of Environmental Psychology, 40*, 381–390. doi:10.1016/j.jenvp.2014.09.006

Leiserowitz, A. (2007). Communicating the risks of global warming: American risk perceptions, affective images, and interpretive communities. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change* (pp. 44–63). New York: Cambridge University Press.

Lieberman, M. D. (2013). *Social: Why our brains are wired to connect*. New York: Crown Press.

Lindenberg, S., & Steg, L. (2014). Goal-framing theory and norm-guided environmental behaviour. In H. C. M. van Trijp (Ed.), *Encouraging sustainable behaviour: Psychology and the environment* (pp. 37–54). New York: Psychology Press.

Maibach, E. W., Leiserowitz, A., Roser-Renouf, C., & Mertz, C. K. (2011). Identifying like-minded audiences for global warming public engagement campaigns: an audience segmentation analysis and tool development. *PLoS One, 6*, 1–9. doi:10.1371/journal.pone.0017571

Masson, T., & Fritsche, I. (2014). Adherence to climate change-related ingroup norms: Do dimensions of group identification matter? *European Journal of Social Psychology, 44*, 455–465. doi:10.1002/ejsp.2036

Matthew, R. (2014). Integrating climate change into peacebuilding. *Climatic Change, 123*, 83–93. doi:10.1007/s10584-013-0894-1

McClure, S. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2004). Separate neural systems value immediate and delayed monetary rewards. *Science, 306*, 503–507. doi:10.1126/science.1100907

McDonald, R. I., Fielding, K. S., & Louis, W. R. (2013). Energizing and de-motivating effects of norm-conflict. *Personality and Social Psychology Bulletin, 39*, 57–72. doi:10.1177/0146167212464234

McDonald, R. I., Newell, B. R., & Denson, T. F. (2014). Would you rule out going green? The effect of inclusion versus exclusion mindset on pro-environmental willingness. *European Journal of Social Psychology, 44*, 507–513. doi:10.1002/ejsp.2040

McKenzie-Mohr, D. (2011). *Fostering sustainable behaviour: An introduction to community-based social marketing*. New York: New Society.

Mols, F., Haslam, S. A., Jetten, J., & Steffens, N. K. (2015). Why a nudge is not enough: A social identity critique of governance by stealth. *European Journal of Political Research, 54*, 81–98. doi:10.1111/1475-6765.12073

Morton, T. A., Bretschneider, P., Coley, D., & Kershaw, T. (2011). Building a better future: An exploration of beliefs about climate change and perceived need for adaptation within the building industry. *Building and Environment, 46*, 1151–1158. doi:10.1016/j.buildenv.2010.12.007

Moser, S. C. (2014). Communicating adaptation to climate change: The art and science of public engagement when climate change comes home. *Wiley Interdisciplinary Reviews: Climate Change, 5*, 337–358. doi:10.1002/wcc.276

Oskamp, S. (2007). Applying psychology to help save the world: Reflections on a career in psychology. *Analyses of Social Issues and Public Policy, 7*, 121–136. doi:10.1111/j.1530-2415.2007.00121.x

Pilisuk, M. (1998). The hidden structure of contemporary violence. *Peace and Conflict: Journal of Peace Psychology, 4*, 197–216. doi:10.1207/s15327949pac0403_1

Platow, M. J., Haslam, S. A., Reicher, S. D., & Steffens, N. K. (2015). There is no leadership if no-one follows: Why leadership is necessarily a group process. *International Coaching Psychology Review, 10*, 20–37. doi:10.1177/008124630703700410

Postmes, T. (2015). Psychology: Climate change and group dynamics. *Nature Climate Change, 5*, 195–196. doi:10.1038/nclimate2537

Rabinovich, A., & Morton, T. A. (2011). Subgroup identities as a key to cooperation within large social groups. *British Journal of Social Psychology, 50*, 36–51. doi:10.1348/014466610x486356

Rabinovich, A., Morton, T. A., Postmes, T., & Verplanken, B. (2011). Collective self and individual choice: The effects of inter-group comparative context on environmental values and behaviour. *British Journal of Social Psychology, 51*(4), 551–569. doi:10.1111/j.2044-8309.2011.02022.x

Rees, J. H., & Bamberg, S. (2014). Climate protection needs societal change: Determinants of intention to participate in collective climate action. *European Journal of Social Psychology, 44*, 466–473. doi:10.1002/ejsp.2032

Reicher, S. D., & Haslam, S. A. (2012). Change we can believe in: The role of social identity, cognitive alternatives and leadership in group mobilization and social transformation. In B. Wagoner, E. Jensen, & J. A. Oldmeadow (Eds.), *Culture and social change: Transforming society through the power of ideas* (pp. 53–73). Charlotte, NC: Information Age.

Reynolds, K. J., & Branscombe, N. R. (2015). Advancing the psychology of change. In K. J. Reynolds & N. R. Branscombe (Eds.), *Psychology of change: Life contexts, experiences, and identities* (pp. 264–281). New York: Psychology Press.

Reynolds, K. J., Subasic, E., & Tindall, K. (2015). The problem of behaviour change: From social norms to an ingroup focus. *Social and Personality Psychology Compass, 9*, 45–56. doi:10.1111/spc3.12155

Schultz, P. W. (2002). Knowledge, information, and household recycling: Examining the knowledge-deficit model of behaviour change. In T. Dietz & P. C. Stern (Eds.), *New tools for environmental protection: Education, information, and voluntary measures* (pp. 67–82). Washington, DC: National Academy Press.

Schultz, P. W. (2014). Strategies for promoting proenvironmental behaviour: Lots of tools but few instructions. *European Psychologist, 19*, 107–117. doi:10.1027/1016-9040/a000163

Schultz, T., & Fielding, K. (2014). The common in-group identity model enhances communication about recycled water. *Journal of Environmental Psychology, 40*, 296–305. doi:10.1016/j.jenvp.2014.07.006

Schultz, P. W., & Kaiser, F. G. (2012). Promoting pro-environmental behaviour. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 556–580). New York: Oxford University Press.

Schwebel, M. (2006). Realistic empathy and active nonviolence confront political reality. *Journal of Social Issues, 62*, 191–208. doi:10.1111/j.1540-4560.2006.00446.x

Seyranian, V. (2014). Social identity framing communication strategies for mobilizing social change. *The Leadership Quarterly, 25*, 468–486. doi:10.1016/j.leaqua.2013.10.013

Seyranian, V., Sinatra, G. M., & Polikoff, M. S. (2015). Comparing communication strategies for reducing residential water consumption. *Journal of Environmental Psychology, 41*, 81–90. doi:10.1016/j.jenvp.2014.11.009

Sheldon, K. M., Nichols, C. P., & Kasser, T. (2011). Americans recommend smaller ecological footprints when reminded of intrinsic American values of self-expression, family, and generosity. *Ecopsychology, 3*, 97–104. doi:10.1089/eco.2010.0078

Smith, J. R., Louis, W. R., Terry, D. J., Greenaway, K. H., Clarke, M. R., & Cheng, X. (2012). Congruent or conflicted? The impact of injunctive and descriptive norms on environmental intentions. *Journal of Environmental Psychology, 32*, 353–361. doi:10.1016/j.jenvp.2012.06.001

Steg, L., Bolderdijk, J. W., Keizer, K., & Perlaviciute, G. (2014). An integrated framework for encouraging pro-environmental behaviour: The role of values, situational factors and goals. *Journal of Environmental Psychology, 38*, 104–115. doi:10.1016/j.jenvp.2014.01.002

Steg, L., & Nordlund, A. (2013). Models to explain environmental behaviour. In L. Steg, A. E. van den Berg, & J. I. M. de Groot (Eds.), *Environmental psychology: An introduction* (pp. 185–195). Malden, MA: Blackwell.

Subasic, E., Reynolds, K. J., & Mohamed, M. S. (2015). Changing social identities to change society: Leadership as a contest for influence and collective mobilization. In K. J. Reynolds & N. R. Branscombe (Eds.), *Psychology of change: Life contexts, experiences, and identities* (pp. 246–263). New York: Psychology Press.

Swim, J. K., & Becker, J. C. (2012). Country contexts and individuals' climate change mitigating behaviours: A comparison of U.S. versus German individuals' efforts to reduce energy use. *Journal of Social Issues, 68*, 571–591. doi:10.1111/j.1540-4560.2012.01764.x

Swim, J. K., Markowitz, E. M., & Bloodhart, B. (2012). Psychology and climate change: Beliefs, impacts, and human contributions. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 645–669). New York: Oxford University Press.

Swim, J. K., Stern, P. C., Doherty, T. J., Clayton, S., Reser, J. P., Weber, E. U., et al. (2011). Psychology's contributions to understanding and addressing global climate change. *American Psychologist, 66*, 241–250. doi:10.1037/a0023220

Turner, J. C., & Reynolds, K. J. (2010). The story of social identity. In T. Postmes & N. R. Branscombe (Eds.), *Rediscovering social identity: Key readings* (pp. 13–32). New York: Psychology Press.

Unsworth, K. L., & Fielding, K. S. (2014). It's political: How the salience of one's political identity changes climate change beliefs and policy support. *Global Environmental Change, 27*, 131–137. doi:10.1016/j.gloenvcha.2014.05.002

van der Werff, E., & Steg, L. (2015). One model to predict them all: Predicting energy behaviours with the norm activation model. *Energy Research & Social Science, 6*, 8–14. doi:10.1016/j.erss.2014.11.002

van Vugt, M., Griskevicius, V., & Schultz, P. W. (2014). Naturally green: Harnessing stone age psychological biases to foster environmental behaviour. *Social Issues and Policy Review, 8*, 1–32. doi:10.1111/sipr.12000

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. doi:10.1016/j.jenvp.2010.01.003

Winter, D. D. (2003). Nurturing a hopeful environmental peace psychology. *Peace and Conflict: Journal of Peace Psychology, 9*, 327–331. doi:10.1207/s15327949pac0904_3