

## **The implications of psychological limitations for the ethics of climate change**

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**ABSTRACT:** Most philosophers and psychologists who have explored the psychology of climate change have focused only on motivational issues—getting people to act on what morality requires of them. This is misleading, however, because there are other psychological processes directed not at motivation but rather our ability to grasp the implications of climate change in a general way—what Stephen Gardiner has called the ‘grasping problem’. Taking the grasping problem as my departure point, I draw two conclusions from the relevant psychological literature: 1) ethicists and policy makers should focus less on changing individuals’ behaviors and more on changing policy; and 2) even though solutions to climate change must come at the level of policy, progress on this front will be limited by incompatible moral norms.

**Keywords:** Climate change; Psychological limitations; Psychological constraints; Stephen Gardiner; Jonathan Haidt

### **1. Introduction**

The philosophical literature on the ethics of climate change tends to give the impression that the main problem is motivational, getting people to act on what morality requires of them. This is misleading. While motivational problems certainly exist, they are part of a larger set of psychological processes that shape our response to climate change. These psychological processes, in turn, complicate the question of what we should ask, morally, of agents responding to climate change.

The first section of this paper introduces what Stephen Gardiner calls the ‘grasping problem,’ or the problem that human beings, either as citizens or policy makers, might be incapable of understanding climate change in even a basic way. I use the grasping problem to argue that there are broader psychological considerations relevant to climate change beyond the role of motivation. The subsequent sections are broken into two parts: first I discuss psychological processes relevant to climate change at the level of individual behaviors, followed by a discussion of psychological limitations at the level of policy and international negotiations. With respect to the psychology of individuals, I argue that the relevant research offers a bleak outlook on the prospects of adequately responding to climate change. Instead, I argue, ethicists

and policy makers should place less emphasis on individual behaviors and more on changing policy, at the state, national, and international level. Finally, while I think it is essential that climate change be addressed at the level of policy, I look at cross-cultural research by Jonathan Haidt to suggest that incompatible moral norms present a significant obstacle to progress. I conclude with suggestions for the ethical project of addressing psychological limitations.

## **2. The grasping problem**

In two recent papers, Dale Jamieson (2010a) and Stephen Gardiner (2011a) identify a number of reasons to think that climate change presents unique moral problems. One key reason Gardiner identifies is what he calls the ‘grasping problem’ (p. 51). Though Gardiner is optimistic about human capacities, he is concerned that ‘our psychologies prevent us from processing climate change as an ethical issue in the right way’ (p. 59). This general concern has also been expressed by psychologists investigating the role of moral psychology in responding to climate change (e.g., Markowitz & Shariff, 2012). The worry is that climate change presents difficulties so different from ‘conventional’ moral practices that we fail to grasp its morally relevant features, both as individuals and as a society. ‘Conventional’ moral practices, as Jamieson and Gardiner understand them, include clear causal connections between actions and observable effects, usually involve victims who are close in space and time to the transgressor, and clearly implicate *individuals* in moral infractions. With climate change these features are less obvious than under normal circumstances (also see Gardiner, 2011b).

There is good reason to think that Jamieson and Gardiner are onto something here. For instance, they both emphasize the difficulties in recognizing our moral duties to people who are either temporally or spatially distant from us. Surveys on global warming frequently show that although people think global warming is real, they do not think this threat pertains anywhere they

possess moral responsibilities (Leiserowitz, 2005; Swim, Markowitz, & Bloodhart, 2012). A likely explanation for this is that people tend to be more concerned about exclusively local risks than other more global risks. Global warming is seen as a legitimate threat to distant people, non-humans, and the environment, but none of these things are seen as important as other local risks, such as risks to one's family and community (Leiserowitz, 2006). So while many ethicists, scientists, and policy makers more generally have come to a consensus on the need to mitigate global carbon emissions (Gardiner, 2010), this need will be relatively difficult to grasp by the general public. Even making this scientific and ethical consensus visible to the public will likely fail to be convincing, and be met with resistance by average citizens, simply because of the psychological constraints it involves.

Ethicists are of course familiar with psychological constraints. Very broadly, we can think about climate ethics as consisting of two main projects, each of which address psychological constraints in their own way. One project consists of reason-giving, wherein ethicists attempt to come to consensus on the requirements of morality (or justice, or some similar principle), and the main obstacle is convincing people of these requirements and their implications. Another project is based in psychology, wherein although regular citizens realize what morality requires of them, this recognition fails to express itself in the right way, and so ethicists must address questions related to overcoming these psychological obstacles. Many ethicists, however, will presumably reject the latter project as not being properly ethical. Instead, it might seem to be a problem to be solved by psychologists, and psychologists alone (or perhaps rhetoricians). Ethicists are likely to see themselves as making prescriptions, while social scientists work out how to persuade people to carry them out, despite the psychological constraints they pose.

Gardiner (2011a) categorizes the tasks for climate ethics similarly, but he talks about the difference between *justifying* reasons and *motivating* reasons. The first are aimed at ‘the underlying reason for moral complaint’ while the second are aimed at ‘the underlying motive for action’ (p. 41). Gardiner’s distinction diverges slightly from my own, as he describes justifying and motivating reasons as pertaining purely to philosophical discourse. However, many ethicists might think a more natural interpretation is to think of the latter, motivational, project as being pertinent to the domain of psychology. For example, perhaps psychologists could motivate people to meet various moral demands, in accordance with the advice of ethicists.

I want to resist these conclusions about the relationship between ethics and psychology. I affirm the importance of thinking about ‘motivating reasons’ as a philosophical issue, worthy of the attention of ethicists, but also want to resist describing this project in purely motivational terms. The wide range of psychological factors that contribute to failure to act on climate change make it misleading to simply say that the problem is motivational. The grasping problem should be seen as involving much broader concerns. If it is the case that human beings are *generally* characterized by certain psychological limitations, then the attendant difficulties will be expressed in many different ways, perhaps even at the level of understanding the relevant justifying reasons.

Gardiner (2011a), for instance, places more emphasis on the justifying reasons of climate change, but only because he is optimistic about human psychology. According to him, indicting our psychologies would simply amount to saying ‘we ought to be morally better than we (currently) are’ (2011a: 42). This is interpreting the grasping problem narrowly as a purely motivational problem—figuring out how to motivate people toward a predetermined set of actions—rather than as a problem of addressing all the ways in which climate change presents

psychological obstacles. In *The Perfect Moral Storm*, Gardiner (2011b) conceives of psychological limitations much more broadly. The research I will discuss later will draw from this broader conception of the grasping problem.

To take just one example of a broad psychological constraint, consider our climate-related duties to spatially and temporally distant others. Many ethicists have argued that people in Western nations in particular possess a moral duty to future generations and people in poorer nations to mitigate the effects of climate change (e.g., Davidson 2008; Singer, 2010). But acting for these people requires us to overcome our natural concern for those in our ingroup.

Ingroup/outgroup psychology includes certain motivational forces but it is certainly not reducible to, or even characterized by, those motivational forces (see e.g., Brown, Bradley, and Lang, 2006; Stürmer, Snyder, and Omoto, 2005). And though some level of ingroup bias might be morally justified (e.g., toward one's children), most prescriptions made by ethicists for acting on climate change require significant concern for people in other countries who would normally constitute an outgroup (or multiple outgroups; e.g., this is required by nearly every essay in Gardiner, Caney, Jamieson, and Shue's 2010 collection).

Overcoming biases (like the ingroup bias), is a psychological problem, but the constraints involved also have implications for the content of ethical prescriptions. On one version of the ought-implies-can principle, if individuals are severely limited in acting on various climate-related moral duties, and these limitations are due to broad psychological constraints (like the ingroup bias), then these individuals no longer possess such duties. Even if the moral duties are not, strictly speaking, *impossible* to meet, ought-implies-can requires that an agent be able to make an adequate first step toward meeting those duties. Streumer's (2007, 2010) account of ought-implies-can, for instance, argues that human agents have no reason to perform an action

unless a ‘real try’ can be made at performing the action. When an action, even if successfully completed, does not bring an agent closer to achieving his or her goals, then it does not constitute a ‘real try’. Streumer provides a number of examples of this. For instance, we can imagine someone trying to stop a plane about to crash by running up a tall building in an attempt to fix the plane’s engines. Even if this person were competent in fixing engines, running to even the highest building would not actually bring him or her closer to fixing the engine. While there are action opportunities available, they do not constitute real tries at achieving the primary goal.

I will argue below that similar examples can be identified with respect to acting on many of the justifying reasons for responding to climate change. People are (psychologically) severely limited in taking effective steps toward meeting their duties, therefore they have no relevant duties. I assume ethicists will find this conclusion troublesome. One way of meeting this challenge head on is by addressing the relevant psychological research, and examining the limitations it might entail.

### **3. Individual limitations**

This section and the next will describe some of the most pertinent psychological obstacles for climate change. This section focuses on constraints facing individuals (which can include coordination of small groups of individuals), while the next section focuses on constraints at the level of policies and between nations (which can also include small-scale change, such as within cities or states). With respect to individuals, psychologists have identified a number of limitations not just in regards to climate change but to all types of proenvironmental behaviors. I will discuss those most critical to mitigating the effects of climate change.

One of the most prominent problems in the expression of proenvironmental behaviors is what has been termed the *value-behavior gap*. This term refers to the now well-known

phenomenon that proenvironmental values and attitudes rarely lead to proenvironmental behaviors. The gap is thought to be caused by a variety of different factors, including psychological factors, which influence proenvironmental behaviors.

The most cited evidence for this gap comes from multiple meta-analyses of the relationship between a combined measure of proenvironmental values-attitudes-intentions and proenvironmental behaviors (Bamber and Moser, 2007; Hines, Hungerford, and Tomera, 1987; Kollmuss and Agyeman, 2002; Osbaldiston and Schott, 2012). These analyses have found an average correlation of 0.30 between values-attitudes-intentions to act positively toward the environment and subsequent proenvironmental behaviors. While this is a positive correlation, it is quite small—right at the .30 ‘predictability ceiling’ used by personality psychologists. A common heuristic used by personality psychologists is to treat as unreliable any correlations lower than .30 between traits and behaviors. The reason for this is that such a weak relationship prevents accurate prediction of behaviors across different situations. Other variables, like situational factors, influence the expressed behaviors so much that the trait is essentially useless for predicting what someone will do in different types of circumstances.

Hines et al. (1987), the most extensive analysis, focused on 128 studies conducted over a 17-year period. These studies focused only on experiments in which people expressed specific intentions to conduct specific environmental behaviors, and the time between expressing the intention to act and having the opportunity to act was minimal. Even with all of these factors present, Hines et al. report an average correlation of 0.35, the highest of any relevant meta-analysis. This evidence suggests that even valuing the environment positively or being convinced that one should take action to mitigate climate change is unlikely to translate into effective behavior.

Two other psychological processes that place constraints on proenvironmental behavior are the *low impact bias* and the *single action bias*. These processes derive from a similar source. The low impact bias refers to the phenomenon where people adopt low impact proenvironmental behaviors that make them feel as if they are fulfilling their moral duties (Stern, 2011). For instance, when people are provided an array of options by which they can reduce energy consumption or environmental impact, they tend to choose only those that involve some level of self-sacrifice but have little environmental impact. People will keep their thermostat at a lower temperature in the winters, or maintain tire pressure on their car, but they won't invest in energy-saving structures for their home or buy fuel-efficient vehicles (Black, Stern, and Elworth, 1985; McKenzie-Mohr, Nemiroff, Beers, Desmarais, 1995; Stern, 1992). This is not due merely to the costliness of the more effective high-impact changes. The former behaviors are indeed less costly, but what appears to be driving individual behaviors is that these actions allow people to quickly meet their moral demands. It is more psychologically efficient (and satisfying) to quickly take a step toward meeting one's moral goals, than it is to take incremental steps toward a more effective goal that will be met at some undetermined point in the future.

The general explanation for this, which ties the low impact bias to the single action bias, is that we possess a 'finite pool of worry' (Weber, 2006). Because we can act on many risks at any one time, particularly with respect to damage to the environment, our minds 'trick' us into taking quick action that eases the demand on our 'pool of worry'. The single action bias refers to the process whereby taking a single action causes a reduction in motivation to take further actions, even when it is acknowledged that these actions are necessary to reach a certain goal (Weber, 1997, 2006). This too stems from the need to quickly meet our moral duties and release the stress they put on our pool of worry. Though motivational issues are involved here, they are

caused by more fundamental psychological processes (this is also acknowledged by Gardiner, 2011b: 193).

The combination of the low impact bias and the single action bias forms a potent challenge to taking effective action. For example, in the absence of the low impact bias, someone might engage in a high impact behavior (like buying solar panels for their house) in order to reduce their carbon footprint, but then refrain from taking any further action, due to the single action bias. This, in itself, is relatively unproblematic. But when these two biases act in conjunction, the prediction is that people will engage in a single low impact behavior, like changing light bulbs, and subsequently feel as if they have ‘done their part’ for the environment.

One final psychological constraint on individual behaviors, and arguably the most pervasive and influential, is the human tendency to conform. For example, various lines of research have found evidence for a ‘like me’ bias, where people only adopt proenvironmental behaviors to the extent that others they see as sufficiently similar to themselves (usually according to socioeconomic criteria) have also adopted those behaviors (Biel and Thøgersen, 2007; Cialdini, 2003). I will describe one illustrative experiment in detail to highlight the significance of our tendency to conform.

Schultz, Nolan, Cialdini, Goldstein, Griskevicius (2007) collected energy consumption rates from 290 households in San Marcos, California, which they then used to calculate a baseline consumption rate in the neighborhood (15.03 kilowatt hours per day [kWh]). They then provided each household with basic information about how their consumption compared with this baseline rate, and continued to track their energy consumption, so as to measure the effects of the information. The basic finding demonstrated strong social conformity: people tended to modify their consumption to bring themselves closer to the norm. Those who were above

average decreased their consumption (from an average of 21.47 to 20.25 kWh), while those who were below average increased their consumption (from an average of 10.38 to 11.27 kWh). So those who were doing well (environmentally speaking) consumed more than usual. The only identifiable causal factor to explain this change was circumstantial—information about local norms.

An additional variable was included, however, that illustrates how easily people are influenced by trivial social feedback. Some households received additional information on their flyer in the form of either a smiley face or a frowny face.<sup>1</sup> Those who were above average received a frowny face while those who were below average received a smiley face. These households showed differential responses to the flyers. Those who were above average and received frowny faces decreased consumption even more than above average consumers who were simply informed of their consumption (from 20.63 to 18.91 kWh). More importantly, those who were below average and received a smiley face *sustained* their normal level of consumption (from 10.34 to 10.58 kWh). So while merely knowing the norms of one's community was enough to increase low (and commendable!) levels of consumption, receiving positive feedback in the form of a smiley face was enough to convince people that they should persist in their commendable levels of consumption.

The psychological processes reviewed here form a potent challenge to mitigating climate change: knowledge and endorsement of proenvironmental values tend not to lead to behavior change, behaviors that are adopted are usually low impact and short-lived, and any changes that are made are likely to recidivate unless the surrounding society approves of the changes. This confluence of obstacles makes it unlikely that individuals can adequately change their behaviors so as to limit energy use or reduce carbon emissions to the extent required. It also indicates that

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<sup>1</sup> They resembled the standard ☺ or ☹.

the behaviors people *can* achieve do not constitute ‘real tries’ at meeting their moral duties. As discussed above, one version of ought-implies-can holds that a ‘real try’ is required for an agent to possess a reason for performing some action. Each of the psychological processes I have reviewed indicate that people often take actions that don’t actually bring them closer to reaching their goals. It’s not *impossible* for people to act on their moral duties to the environment or in responding to climate change, but they are severely limited in taking effective first steps. If we accept ought-implies-can, then the psychological limitations just outlined must similarly limit people’s moral duties in responding to climate change.

I have provided only a snapshot of recent research on constraints individuals face in adopting proenvironmental behaviors. As a result of this research, it would seem that ethicists and policy makers should place less emphasis on trying to convince individuals of their moral duties to the climate. Instead, I think ethicists and policy-makers should look elsewhere—namely, change at the level of policy and societal infrastructure. Unlike individuals, governments and nations possess significant resources for overcoming obstacles and meeting moral obligations. The psychological limitations that prevent ‘real tries’ for individuals are thus much less relevant when considering duties at a societal level. So if we want to reduce carbon emissions, we must look beyond individual behaviors.

Schultz et al.’s (2007) study provides one way of seeing how focusing on climate change policies can be more effective than focusing on individual behaviors. Conforming behaviors are much less problematic if the norms people are conforming to are set according to what is needed to mitigate climate change. This significantly lowers the threshold for people to make ‘real tries’ in mitigating climate change. This is in fact what many climate change policies attempt to exploit in making changes to societal infrastructure. For instance, the best predictors of energy use tend

to be nonpsychological factors, such as household income, geographic location, and other sociodemographic factors (Abrahamse and Steg, 2009; Gatersleben, Steg, and Vlek, 2002; Hunecke, Haustein, Grischkat, and Böhler, 2007; Whitmarsh, 2009). This indicates that many of our proenvironment behaviors and attitudes are not ‘up to us’ in a substantial way. Rather, the surrounding society, including basic infrastructure, determines what sorts of behaviors we will adopt. Mitigating climate change must thus come at the level of infrastructure and societal change, not directly at the level of individual behaviors. The simple reason for this is that individuals acting alone (or perhaps even in aggregate) cannot act on climate change in a way that satisfies what morality seems to require of them.<sup>2</sup>

In the next section I will provide further details about the relevance of psychological limitations at the level of policy and group behavior. In short, the argument is that although adequate solutions can only be pursued at the level of policy (as I have just suggested), the values that need to be adjudicated at the level of policy provide potentially insurmountable difficulties.

#### **4. Moral foundations and moral norms**

A concern that Jamieson (2010a: 436) raises about human psychology is the possibility that some people do not ground their moral judgments in considerations of harm. Returning to the discussion of the grasping problem, it seems that morality requires people to be sensitive to the suffering of temporally and spatially distant others, especially for mitigating climate change (Gardiner, 2010). The psychological difficulty inherent in considering temporal and spatial distance is exacerbated if it is the case that people are insensitive to specific types of harm.

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<sup>2</sup> This is not an argument that people do nothing *wrong* in failing to adopt proenvironmental behaviors. That would require further discussion of the role of consequences. (Sandberg, 2011; Sinnott-Armstrong, 2010).

Research from psychology suggests that Jamieson is right to worry. Jonathan Haidt's research into 'moral foundations' is known, among other things, for questioning the centrality of harm in moral transgressions. Haidt contends that the sphere of morality goes far beyond harm, to include violations of purity, loyalty, and much else. According to Haidt, human morality is determined by six moral foundations, which include liberty/oppression, fairness/cheating, care/harm, loyalty/betrayal, sanctity/degradation and authority/subversion (Haidt and Graham, 2007; Haidt and Kesebir, 2010).

For example, although people drawing from any of these foundations will be *receptive* to harm, Haidt and his colleagues found that *moralizing* of non-harmful behaviors was more prevalent among non-Western societies and people who were low in socioeconomic status (Haidt, Koller, and Dias, 1993). Brazilians, to take one example, tended to treat the wearing of uniforms to school as universally binding—a characteristic feature of moral norms—but denied that anyone was harmed by the violation of this norm. A conclusion that can be taken from this research is that a harm-based ethical theory will fail to resonate in the right way, morally, with certain psychological profiles. For example, someone who does not ground their morality in care/harm will be able to perceive and be sensitive to certain types of harm, such as harm caused by climate change, but without drawing more heavily from care/harm it is unlikely that they will provide assistance to others *because* they are being harmed. They would be less likely to see harm arising from climate change as conferring moral duties on them, for instance, unless the harm caused had implications for one of their other moral foundations.

Haidt and his colleagues have conducted a number of studies showing significant cross-cultural variation on these foundations. Haidt's main finding, primarily in an American context, is that political liberals tend to value fairness and harm more than loyalty and dominance

hierarchies, while political conservatives, though they are not insensitive to harm and justice, tend to value loyalty and other values associated with dominance hierarchies (Graham, Haidt, and Nosek, 2009; Haidt and Joseph, 2004, 2007). This suggests that liberals and conservatives possess, at least to a certain extent, *non-overlapping* moral foundations. Graham, Nosek, Haidt, Iyer, Koleva, and Ditto (2011) found that this basic phenomenon generalized to 12 different world regions. That is, regardless of other political and social circumstances, there were significant differences between people who valued fairness and harm on the one hand, and people who valued loyalty, authority, and sanctity on the other hand (also see Van Leeuwen and Park, 2009).

These moral psychological differences have serious implications for climate change. There is an abundance of research showing a correlation between moral values and attitudes to climate change, roughly along the lines of Haidt's foundations. In surveys, for instance, people with egalitarian views tend to see global warming as a risk while those with individualistic, authoritarian, and hierarchical views do not (Dake, 1991; Heath and Gifford, 2006; Kasser, 2011; Leiserowitz, 2006; Son Hing, Bobocel, Zanna, and McBride, 2007). The community-oriented moral foundations (Loyalty, Authority, Sanctity) present a particularly acute challenge. People who score high on these foundations are not blind to harm, but they tend to rank harms to one's community—including existing economic and social structures—as being more important than harms to distant others. For instance, people scoring high on these values tend to endorse climate policies that are excessively low cost and ultimately ineffective (Tobler, Visscher, and Siegrist, 2012). Another example comes from Feygina, Jost, and Goldsmith (2010). They found that conservatives engage more in 'system justification,' or promoting current social and economic structures as being just. Feygina et al. found that these people would agree to take action against

global warming only if doing so was portrayed as patriotic. In Haidt's terms, they agreed to take action only when they saw global warming as relevant to their moral foundations (also see Lewandowsky, Oberauer, and Gignac, 2013).

These moral psychological differences suggest that settling certain moral disputes will be enormously difficult. Incompatible values will be pitted against each other, with compromises coming at the expense of one's values. Those who value tradition and authority will differ markedly in the types of policies they endorse from those who value caring and fairness. As suggested already, those who value loyalty, authority, and sanctity will likely be reluctant to sacrifice traditional practices for the sake of the environment. Presumably these people will also refuse to recognize the legitimacy of any ethical prescriptions coming from those who emphasize only care and harm. Care and harm are, arguably, the main source of prescriptions in climate ethics. This is generally the case even when ethicists argue for local action on climate change. Jamieson (2010b), for instance, argues that cycling instead of driving a car and donating to Oxfam can be understood as moral responses to climate change. Though this might seem like an appeal to the community-oriented moral foundations, rather than care and harm (e.g., perhaps loyalty), Jamieson justifies these actions by their global effects, because they 'link us in our myriad roles and identities to people all over the world' (p. 277). Haidt's research suggests that this type of reasoning will not be persuasive to significant portions of the population.

To emphasize how much of an obstacle incompatible moral norms really are, I will describe their application to the analysis of risks associated with climate change. A familiar problem with risk analysis is the fact that our emotional reactions to events tend not to correspond to objective measures of risk (Sunstein, 2005; Weber, 2006). Instead our risk assessment is determined by a variety of biases. These biases result in a subjective ordering of

risks. Cass Sunstein (2005), for instance, describes how some countries tend to act against risks related to terrorism (e.g., the U.S.) while others act against risks related to the environment (e.g., Germany). This of course leads to problems when discussing risks associated with climate change at the international level. Some countries want to act against climate change because they see it as an important and imminent threat, while others prioritize different risks.

Consider an argument that Sunstein (2005) has offered as an objection to the use of the precautionary principle. He argues that our subjective orderings of risks makes it impossible to adopt a *general* precautionary approach toward risk. One problem is that there are simply too many risks that require a response. For example, terrorism and climate change both produce risks. Choosing which one will receive greater attention and resources requires an ordering of risks. So in fact what happens is that action is only taken on the highest ordered risks, not on risk in general. Of course the ordering will tend to reflect subjective biases and not an objective measure of risk, so the general approach misses its mark. More critically, however, in choosing to act against one risk we increase other risks. For instance, investing in risks associated with terrorism reduces resources for dealing with climate change. In acting against our highest ordered risks, we simultaneously increase the chance of being affected by other lower ordered risks, thus failing to reduce overall risk.

Though I think there are responses available to Sunstein's specific objection, this line of reasoning about the psychology of risk assessment holds up well in light of Haidt's research. Moral foundations determine our orderings of risk. As mentioned above, although humans are sensitive to harm, moral foundations still determine what *types* of harm we see as most risky. Someone who values traditional dominance hierarchies will be more concerned with harm inflicted on members of their own community than that inflicted on distant others. They might

recognize that distant others are being harmed by climate change, but they will also recognize that investing resources to mitigate this harm takes away resources that could prevent harm to their own community. If Sunstein is right, there is always a tradeoff between types of risks. The risks supported by one's moral foundations will tend to be seen as more important and receive increased resources while others are neglected. This notably holds even when there is considerable overlap in certain foundations, like a mutual concern for harm.

It is difficult to see how these disagreements can be resolved democratically. This is what I take to be the greatest challenge to dealing with psychological limitations—resolving incompatible moral norms. Individual psychological limitations lead to the result that we must address climate change at the level of policy, but at the level of policy we find that individual limitations are partly due to incompatible moral norms. This suggests that behavioral change will be difficult at this level as well. For instance, those who ground their morality in dominance hierarchies are likely to resist global efforts to reduce carbon emissions, especially in countries where great financial gain is anticipated. Addressing this resistance will be less about motivating people to show concern for temporally and spatially distant others and more about asking people to pit local harms against distant harms. Sunstein's arguments against a general precautionary approach to risk indicate that this is unlikely to be successful. People who value dominance hierarchies are likely to reject action against climate change because it takes away resources that would provide local benefits.

I argued in the previous section that focusing on individuals is unlikely to produce positive results for climate change. It is better to focus on changing infrastructure and coordinating group behavior at the level of policy. However, the research I just outlined indicates that moral foundations present an obstacle at this level of analysis. Climate change policy

requires the adjudication of multiple conflicting moral values and viewpoints. There are significant differences in moral values even within countries, and we might think that the differences between some countries (e.g., the U.S. and China) are insurmountable. The challenge at the level of policy, then, is to accommodate incompatible moral foundations while retaining aspirations to meet what morality requires of us.

While this is a significant challenge, focusing on broad societal and infrastructural changes is still preferable to focusing on individual behaviors. The psychological limitations I outlined for individuals do not affect governments and nations as much because at a societal level these limitations are more distributed (in a variety of dimensions), and any one government entity can receive support from other governmental entities, all of which have more resources than are available to individual human beings. A distinction commonly made by political theorists, when discussing large-scale changes, is between hard and soft constraints (e.g. Gilibert & Lawford-Smith, 2012). Hard constraints are relatively inflexible, while soft constraints are plastic and can be changed over time. When ethicists and policy makers propose actions for mitigating climate change, they are usually focusing on soft constraints. Altering soft constraints will often be costly (e.g., changing energy infrastructure), but governments and nations (unlike individuals) can pursue these changes incrementally, with the benefit of enormous resources and time to complete the change. This is why the principle of ought-implies-can has a greater impact on individuals' moral obligations in responding to climate change (as I argued above) than on the moral obligations of governments and nations (though the *exact* difference in impact is widely debated and contested; Gheaus, 2013; Simmons, 2010; Stemplowska & Swift, 2012).

## **5. Conclusion: Mitigating psychological limitations**

The arguments presented have led to three main conclusions: 1) the psychological limitations relevant to climate change are not purely motivational, 2) the relevant individual psychological limitations provide reasons to focus more on changing policy and less on individual behavior; and 3) even though solutions to climate change must come at the level of policy, progress on this front will be limited because of the inability to adjudicate incompatible moral norms. Though much more could still be said about all three points, I wish to conclude with final thoughts on the ways in which ethicists can address psychological limitations.

As I suggested earlier, identifying psychological limitations should change the way we think about various ethical projects related to climate change. According to the project of producing *justifying* reasons, ethicists attempt to justify certain sorts of actions (e.g., reducing carbon emissions) regardless of whether anyone is particularly disposed or motivated to act on those justifying reasons. An implication of the arguments I have presented, however, is that many such normative projects should be considered psychologically implausible, at least for individuals. Many of the justifying reasons for responding to climate change do not correspond to any solutions that can receive an adequate response from individuals. Some people will be incapable of taking effective action in accordance with these justifying reasons, while others will fail to recognize the justifying reasons as legitimate, due to divergent moral foundations. Such projects are thus not action-guiding in the way ethicists typically envision.

However, perhaps, someone might say, we should attempt to eradicate these limitations. Getting around these limitations would require enormous changes in infrastructure, changes that would presumably have to be controlled at the level of policy, but ultimately they are modifiable. Many ethicists and policy makers could agree that we should move away from focusing on individual behaviors, while nonetheless working to eradicate the biases I have identified. After

all, change at the level of policy seems dependent in some way on the aggregation of individual behaviors. And one implication of my argument above is that the responsibility falls on policy makers to make the necessary changes to mitigate climate change.

The Schultz et al. (2007) experiment, for instance, is featured in Thaler and Sunstein's (2009) well-known book *Nudge*, which offers various proposals for social and infrastructural change to 'nudge' individuals in the right behavioral direction (i.e., toward some agreed upon generally desirable goal). Furthermore, in the U.S., for example, approximately 40% of energy use comes from individual households (Wolf and Moser, 2011: 550). Dietz, Gardner, Gilligan, Stern, and Vandenberg (2009) argue that even relatively low-impact behaviors such as buying fuel-efficient cars and weatherizing homes could reduce the contributions of individual households by 20%, reducing U.S. emissions by 7.4% annually. If these behaviors could become easier to enact, perhaps we could make some progress toward mitigating climate change.

There are a couple reasons to resist the idea that such psychological limitations could be modified in the way envisioned. For one, there are many people who do not recognize any such need! Those who wish the status quo to remain unchanged will not want to undergo any psychological modification. And as I have argued, adjudicating the moral psychological differences that produce this disagreement will be quite difficult. Furthermore, even if this change were to occur, there will likely continue to be pressure from those who stand to gain financially from increased energy use, for example, and will want to revert back to the old system. Resistance to adopting proenvironmental behaviors related to climate appears to be due to the benefits—psychological, financial, and otherwise—derived from increased energy use (among other behaviors contributing to climate change). Preventing a return to more exploitative

norms would seem to require constant vigilance, particularly against those who draw from the moral foundations of loyalty, authority, and sanctity.

Another reason to resist psychological modification is that thoroughly engrained processes—such as the ones I have outlined—will be incredibly costly to change. Though I suggested that ethicists and policy makers typically think of psychological constraints as ‘soft’ constraints that are changeable, some of the constraints I have described tend toward the inflexible end of the spectrum. Conformity, to take just one example, is a relatively fundamental aspect of human psychology. Perhaps we can modify specific pockets of conformity related to climate change, but we cannot eradicate conformity as a whole. Attempting to do so would be both costly and futile.

Nonetheless, focusing on pockets of flexibility remains potentially fruitful. Perhaps ethicists and policy makers could use conformity to their advantage. Or, as mentioned above, there may yet to be options for appealing to multiple moral foundations (in the spirit of Haidt). This would require relatively less drastic change on the part of average citizens. However, any of these options arguably entail a significant shift in strategy on the part of ethicists and policy makers.

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