Motivation and climate change: A review

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Review

Motivation and climate change: A review
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Abstract
This paper reviews motivations people experience about climate change and integrates recent findings into the BUCkET model of core social goals. We argue that environmentalism is not the main cause of thoughts or behaviors about climate change. Rather, the evolved social needs for Belongingness, Understanding, Control, self-Enhancement, and Trust are more practical intervention targets than the attempt to create environmentalist beliefs or identities. We used database searches to identify the key research areas on motivation and climate change and synthesized articles into the BUCkET model. This reveals some limiting assumptions of previous approaches and suggests the effectiveness of targeting existing motives rather than fostering new values or worldviews.

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A central paradox in human behavior is that people value their health, relationships, and environments yet choose actions that harm them. One explanation for this value-action gap is that evolution shaped human minds to respond to problems faced by our distant ancestors [9]. Consider the disproportionate fear people experience towards spiders compared to cars, even though road injuries are a major cause of death worldwide. Climate change is an abstract, slow, and distant problem unlike any our ancestors adapted to solve, and therefore humans are poorly equipped for environmentalism [33]. Rather, animals developed biological drives such as reproduction that are partially served in humans through psychological motivations like maintaining positive interpersonal relationships. For example, people overconsume to boost their social status [31]. This leads to two discomfiting claims: behaviors that impact the environment are rarely explained by a conscious motivation towards nature, and conservation efforts will fail if the damaging behavior is easier, cheaper, or better serves social motives. Even deliberate conservation actions could be explained through core social motives (review; [88]), and meta-analyses suggest that the most effective interventions harness motives such as belongingness [24].

Beyond environmentalism
Contrary to what might be assumed, proenvironmental thoughts and behaviors are only weakly linked (for reviews, see: [50,78]). This suggests that environmentalism is not the main cause of relevant behaviors. Long-term concern about the natural environment is new in evolutionary terms, and its abstraction, distance, and uncertainty can make it hard to understand. Despite this, many interventions are still based on the knowledge deficit model, which holds that damaging behaviors are caused by the ignorance of facts. This claim is hard to substantiate. The strongest predictors of individual environmental damage are demographic like income and country rather than psychological like environmentalist identity or behavioral intentions [63].

Even environmentalists want to behave in ecological ways, but they still tend to focus on actions with small benefits. There is a wide gulf between the environmental behaviors most people think about and adjust (such as recycling or turning off lights) and their behaviors with large impact (such as indirect water use or home size), and these different classes will have different predictors [59]. Even climate scientists fly a great deal [91]. Consistent with this separation, people are surprisingly inaccurate about the environmental impact of common behaviors, for example, of household appliances using water [4] or energy [5].

In sum, environmentalism is not a unitary and internal psychological construct but only a semantic label that groups distinct phenomena by face validity, combining other terms like climate change beliefs and recycling behavior. A recent paper explains that assuming scientific terms are real, discovered, and have an underlying

essence is pervasive across psychological science, including areas like neuroscience and biopsychology [13]. Proenvironmental behavior is not a single thing either (review: [54,75]). Almost nothing is similar between the habitual behavior of recycling and the expensive, one-off purchase of a new furnace. They might each be weakly linked to cognitive variables such as attitudes about conservation, but that does not mean the behaviors form a coherent, separate category. Too quickly assuming labels like environmentalism or proenvironmental behavior have valid and unitary essences assuming the descriptive stage of mapping outcomes across contingencies, contexts, and populations [30,71]. Fortunately, environmental beliefs, preferences, and behaviors can also be explained through well-established social motives.

The current review

This article focuses on core social motivations—needs that arise in social settings. Below, we integrate recent climate change research into the BUCkET motives: **B**elonging, **U**nderstanding, **C**ontrolling, self-**E**nhancing, and **T**rusting others (Table 1). Key psychological research was identified through author experience and nonsystematic reviews of years 2010−2020 for publications in Web of Science and Google Scholar in September 2020. The first query was (“proenvironment* OR environmentally responsible* OR climate change OR climate change mitigation OR global warming OR sustain* OR green”) AND (“motive* OR behavior* OR attitude* OR norm* OR intent* OR personality”). These articles were examined for relevance, their references and citing articles were also reviewed, and the most relevant and informative were included in the review.

Belonging

Thoughts, feelings, and behaviors are shaped by the desire to build and sustain positive social relationships. Social norms quickly emerged as one of the central predictors of proenvironmental and climate mitigation behaviors (review: [34]). Descriptive norms are beliefs about what others are doing, and injunctive norms are beliefs about what others should be doing. Notably,

people dramatically underestimate how much others influence their behavior [94]. Because affiliation motives are powerful, fundamental, and underappreciated, they are a major potential lever for interventions ranging from message framing to social context and can also explain antienvironmental preferences [39] and behaviors [81].

In a rare transition of social psychology to large-scale application, norm interventions on household energy use [72] inspired a major commercial venture in Opower, a company that introduced normative messages into utility bills. The messages showed how much energy people used compared to their neighbors (descriptive) and included neutral or smiley face emojis (injunctive). These messages reduced household energy use by 2%, which is massive considering that Opower operated in nine countries and 50 million households when it was sold in 2016. Descriptive norms are also a key predictor of public-sphere climate action such as volunteering, at least among those alarmed about climate outcomes [23].

Understanding

People are motivated to feel that they understand what is real and why things happen. Crucially, this feeling does not require that knowledge is accurate nor internally consistent. The chasm between facts and widespread conspiracies can be partially explained through the desire to understand (and other motives like belongingness). This is particularly concerning because conspiratorial thinking predicts climate change denial [57].

Recognizing the motive for understanding allows climate change communicators to move beyond a simple deficit model of ignorance (for example, presenting facts about atmospheric chemistry) towards providing individuals with satisfying opportunities such as aligning their beliefs with what others think. For example, the Gateway Belief Model is the replicated finding that informing people about the high scientific consensus about human-caused climate change leads to increases in relevant, accurate beliefs and willingness to act

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Table 1

Core Social Motives and Climate Change (Fiske, 2018)

Name	Motive	Example Research Areas (climate change)
Belonging	Maintain positive, stable relationships	Descriptive and injunctive norms
Understanding	Integrate new information and construct shared meaning	Conspiracies; scientific consensus
Controlling	Feel competitive and effective	Self-efficacy; psychological distance
self-**E**nhancing	Be seen as socially worthy	Consistency; signaling; personal norms
Trusting	Believe that others are benevolent	Cooperation; prosociality

Also see similar frameworks such as Self-Determination Theory [70] and an updated hierarchy of human needs [47].

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towards mitigation and adaptation [84,85]. This intervention might also support belongingness, but the understanding component has a unique contribution because boosting consensus can also reduce group-based ideological biases [35].

Controlling

The motives to effectively control one's environment, achieve mastery, and feel competent are core behavioral drivers [68–70,73]. Self-efficacy—the perceived ability to mobilize resources and take action—is essential for behavior change and persistence [8], including proenvironmental behaviors [53,80]. Self-efficacy also mediates spillover: adopting an initial, easy proenvironmental behavior develops individuals' confidence and skills, which motivates further, more difficult proenvironmental actions [55]. Similarly, perceived behavioral control drives a wide range of behaviors [1], and particularly more difficult and impactful proenvironmental actions such as avoiding driving [7,32]. This literature helps explain the importance of convenience factors [58] and reveals that increasing proenvironmental actions requires making green actions easier than more polluting actions (for example, by reallocating road space from cars to cyclists and pedestrians) [46].

Climate change is global, long-term, and uncertain, which can lead to low perceived control and motivation to engage in mitigation or adaptation: feeling like a drop in the ocean [59]. Further, climate change is psychologically distant in time and space, unavailable to sensory experience, and therefore deprioritized in favor of more proximal problems [16,42,61,77] (review: [62]). Extreme weather events like floods [2,90] can make climate change salient and threatening. Actions like flood-proofing one's home are more likely when perceived as effective and controllable [22,37]. Boosting individual and collective efficacy (review [49]: can thus increase motivation for mitigation and protective action against climate change impacts [28] (systematic review: [51]).

Self-Enhancing

People are motivated to see themselves as consistent and worthy. How people describe themselves (self-identity) is influenced by personal motivations for self-esteem, self-enhancement, and self-understanding, as well as social interactions and roles [25]. People are motivated to act consistently and express their self-identity through actions and purchases [10]. Proenvironmental identity predicts green consumption behaviors [19,36,45,76,86], recycling [60], carbon offsetting [93], avoiding flying [32], and green policy preferences [14]. Identity can support consistency across actions and contexts, thus mediating spillover between proenvironmental behaviors [52,87]. In contrast, external interventions without self-

enhancement motives such as price signals are less likely to spill over because individuals do not attribute the action to their identity [67] (review: [83]). Conspicuous conservation describes when individuals seek status by demonstrating their green credentials, for example, by purchasing hybrid or electric vehicles [64,74]. Environmentalist identity may best predict proenvironmental behaviors that are visible to other people [15].

Self-enhancement includes the motivation for moral integrity: being a good person. Similarly, personal norms are perceived moral obligations and also predict certain proenvironmental behaviors [12,17,26,48] when not in conflict with other motives (reviews: [78,79]). Climate change is a moral issue for many people [41]; addressing it requires considering social inequalities, intergenerational justice, and environmental degradation. Consequently, environmentalist, self-transcendent, and progressive values are the strongest predictors of climate change attitudes [93] (meta-analysis: [40]).

For those with strong environmental values, taking green actions can afford a warm glow and intrinsic satisfaction [82], whereas taking more polluting actions can create guilt [65,11]. Conversely, environmental information that threatens a valued social identity, such as one's political affiliation, is likely to be ignored or denigrated [38,43]. In climate change communication, motivated reasoning can lead to attitude polarization [21]. Likewise, a behavior such as reusing a grocery bag might be shunned to avoid looking like an environmentalist [15]. Reframing environmental action in line with audience values may overcome identity threats and motivate attitude and behavior change [27,92].

Trusting

In addition to the desire to belong, people are motivated to trust others and believe that others are benevolent [29]. Trust will be a crucial aspect of climate change action because the required physical changes are complex, distributed, and require cooperation spanning from small groups to international treaties. This systematic need aligns with trust in scientists and institutions emerging as a key lever for climate communication and behavior change in the USA. [3] and Germany [44], as well as in a recent meta-analysis [18].

The desire to trust others can also reveal novel pathways to policy support for mitigation. In 24 countries, individuals were motivated towards action when they were informed of cobenefits such as development (economic and scientific) and benevolence (a moral and caring community) [6]. These effects were of similar magnitude to the belief that climate change is important, which reinforces the potential for harnessing existing motives. Last, perhaps because environmentalists are perceived as

trustworthy, environmentalists are seen as more cooperative in social dilemma tasks [89] and even preferred as romantic partners [66].

Conclusion

Because of how human minds evolved, actions on climate change are explainable through social motives; even phenomena such as cognitive dissonance or ambiguity avoidance that are commonly attributed to intrapsychic processes may be explained by interpersonal processes, according to a recent review [56]. Social motives may be a uniquely effective target for interventions since they are ubiquitous and afford many roads to action, for example by activating different identities. Other frameworks of fundamental motives could also serve as a basis for interventions. For instance, Self-Determination Theory covers similar core motives: autonomy, competence, and relatedness [20,70]. Another related model of fundamental needs is well-grounded in evolutionary psychology, and it overlaps most with the BUCkET motives for status and esteem [47]. However, these frameworks do not fully explain behaviors. Major topics within environmental psychology such as social norms or identities can plausibly fit several motives, and behaviors are also driven by habits and homeostatic drives.

Our practical advice is for researchers to identify a behavior with environmental consequences, determine how it serves core social motives, and test an intervention targeted at fulfilling those motives. This process may also reveal instances when difficult conservation behaviors conflict with existing motives. In these cases, the most effective interventions might limit individuals' capacity to do harm, for example, through taxes or regulations. Overall, harnessing core motives could help avoid the worst outcomes of climate change. Many drops can fill a bucket.

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Conflict of interest statement

Nothing declared.

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- • of special interest
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