

Identity and Climate Change

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Abstract

While scientific consensus about the risks and threat of anthropogenic climate change has solidified over recent years, less than half of Americans believe that climate change is real or caused primarily by humans. A number of explanations for this public opinion gap on climate change have been introduced in the literature, however we find that current explanations fall short in determining how individuals develop certain beliefs, and why so many Americans deny the existence of anthropogenic climate change. In this essay, we introduce an identity theory of climate change beliefs to help fill this gap. Building on social psychology literature and identity theory, we define three main identities prevalent among American climate change deniers, and discuss how current climate change communication strategies can raise the salience of each. When these identities are threatened, individuals often react in a defensive way, strengthening that identity and further denying climate change. By shifting the narrative used with each type of identity, communicators may be more successful in changing climate change beliefs and closing the public opinion gap on climate change.



Introduction

The scientific consensus on climate change is nearly complete. The most recent Intergovernmental Panel on Climate Change (IPCC) report concluded that it is extremely likely (signifying 95-100% certainty) that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by an anthropogenic increase in greenhouse gas concentrations (IPCC, 2013). An analysis of peer-reviewed climate change articles from 1991-2011 found that 97.1% articles with a position asserted that humans are causing global warming (Cook et al., 2013). Yet despite this almost unanimous scientific agreement, public opinion about climate change in the United States remains divided. A 2014 poll by the Pew Research Center found that only 44% of Americans thought there was solid evidence of climate change caused mostly by human activity (Pew Research Center, 2014b).

There is a considerable literature on the gap between public opinions and scientific knowledge concerning climate change in America. Many theorists have tried to explain this chasm between public opinion and scientific knowledge, citing reasons of partisanship, economic priorities, values, and framing, among others. These contributions are meaningful and important for understanding this puzzle. However, they fall short in explaining how individuals develop beliefs about climate change, and why they persist despite corrective scientific information. Leveraging recent scholarly contributions on the roles of social identities in guiding political attitudes (see Huddy, 2001), this paper proposes an identity theory of climate change denial that can better explain the observed pattern of opinion on climate change. Building off of the social identity literature, this theory focuses on the salience of certain identities which are threatened by narratives of climate change, and proposes alternative frames which lessen the threat to identity of climate change.

The paper flows as follows. First, we define the focus of our analysis: climate change deniers, and review common characteristics as established in the literature. Second, we briefly review the most prominent current explanations for the public opinion gap on climate change and where they fall short. Third, we introduce the concept of a climate change identity and the role of narrative in establishing this identity. Fourth, we introduce four climate change identities evident in American culture, and discuss how framing the narrative of climate change differently can threaten or support these identities. Finally, we conclude by presenting potential ways to empirically test this theory.

Characterizing Climate Change Deniers

Climate change denial or skepticism are broad terms, and can refer to several different sets of beliefs. We use the term “climate denier” to refer both to those who deny that the climate is changing at all, as well as individuals who acknowledge climate change but deny that humans are the cause. Climate change deniers are more likely to be older, white, less-educated, and male (Leiserowitz, 2005; McCright & Dunlap, 2011a; Whitmarsh, 2005). Beyond these basic demographic correlations, the literature highlights four other characteristics of climate deniers that are important to note.

First, climate change beliefs and political party identification are strongly correlated. A look at any major national poll on climate change beliefs in America demonstrates that climate deniers are most likely to be Republicans (Dugan, 2014; Pew Research Center, 2014b). The literature on the politicization of climate change is exhaustive (Brulle, Carmichael, & Jenkins, 2012; R. E. Dunlap & McCright, 2008; McCright & Dunlap, 2011b).

Second, economic conservatism is commonly prevalent among climate deniers, particularly a commitment to values of free market capitalism (D. Kahan, 2010). Free market capitalism focuses on the expansion of free enterprise, and rejects policies thought to threaten this freedom, including regulation, taxation, and the growth of the state (Antonio & Brulle, 2011). In the eyes of climate deniers that identify with market capitalism, the policies that result from acknowledging climate change directly threaten the principles of governance that they adhere to. This is particularly pronounced among Tea Party Republicans.

Third, a distrust of the scientific elite is related to climate denial (Carvalho, 2010; Diethelm & McKee, 2009; Hoffman, 2011; Hopkins, 2014). Trust in science has declined in recent years (Leiserowitz, Maibach, Roser-Renouf, Smith, & Dawson, 2013), especially among those that deny climate change (F. Mayer, Adair, & Pfaff, 2013). A 2011 poll found that 69% of Americans think that scientists have falsified climate change research (Hopkins, 2014).

Fourth, a disproportionate number of climate deniers are religious, especially fundamentalist Christians. While 29% of the total US population (and 27% of mainline Protestants) believed that there was no or mixed evidence that the Earth was warming in 2009, that number reached 42% among white evangelical protestants (Pew Research Center, 2009). Climate denial is consistently

more common among fundamentalist Christians than among any other religious group in America (Stoddard, 2009).

Current Explanations for Climate Change Denial

A number of explanatory mechanisms for the public opinion gap on climate change have been offered by scholars over the past decade. We describe four of the most prevalent mechanisms below. While each has its merits, none completely explains how individuals form beliefs about climate change that persist so strongly. Our identity theory of climate change denial builds on each of these mechanisms to provide a more nuanced explanation for the public opinion gap on climate change.

Information Deficit

The traditional information deficit model of scientific communication asserts that the gap between scientific knowledge and public opinion simply reflects lack of information, and that increased communication about science issues will move public opinion towards scientific consensus (Hart & Nisbet, 2012a; M. C. Nisbet & Scheufele, 2009). However, studies finding that reported knowledge of climate change has risen while public opinion has remained stagnant have invalidated this explanatory model (D. M. Kahan, 2013; Sturgis & Allum, 2004; "The New York Times/Stanford University Poll on Global Warming," 2015). Additionally, other studies show that increased information about climate change can actually generate a boomerang effect, which occurs when message exposure has the unintended consequence of backfiring and heightening opposition, instead of creating consciousness and literacy about the issue (Hart & Nisbet, 2012b; E. C. Nisbet, Cooper, & Garrett, 2015).

Economic Self Interest

Scholars have also argued that economic self-interest can explain climate denial. In this model, cognitive dissonance occurs when individuals with an economic disincentive to reduce emissions (such as those employed in the fossil-fuel industry or living a high-carbon lifestyle) are faced with the need to reduce emissions. Because of this dissonance, these individuals are often more likely to deny climate change (Hulme, 2009; Klein, 2011; Stoll-Kleemann, O'Riordan, & Jaeger, 2001). While this theory explains some climate denial, the vast majority of climate deniers lack strong economic interests that would be threatened by climate policies. While it may be reasonable for politicians from West Virginia, an economy dependent on coal, to fight against climate policies, climate

deniers from states whose economies are among the most vulnerable to climate change, such as South Carolina or Louisiana, are acting against their economic interests in denying climate change (Rampell, 2015).

Elite Cues and Partisanship

Elite cues theory maintains that individuals make judgments about policy issues such as climate change by simply following the party line or the positions of elites whom they trust (Brulle et al., 2012; Krosnick, Holbrook, & Visser, 2000; McCright & Dunlap, 2011b; M. Nisbet, 2009a). This tends to translate into individuals voting down party lines regarding issues like climate change. While partisanship is an important predictor of opinions regarding climate change, the correlation between political ideology and climate change beliefs is not perfect (Saad, 2013), and fails to concretely describe why climate change tends to be a “Democratic” as opposed to a “Republican” issue. This explanation also fails to address a current trend of elite attitudes on climate change lagging behind public opinion (Davenport & Connelly, 2015).

Framing

Finally, many scholars have focused on how climate change information is communicated and absorbed by individuals. Framing is a strong influencer of how people perceive climate change (Knight & Greenberg, 2011; M. Nisbet, 2009a; Spence & Pidgeon, 2010a). Despite the power of frames in climate change communications, it is not always evident which frames work, and why. It is clear that the source and framing of a message matters, however there still remains significant work to be done to understand more deeply how frames operate in the mind, and why some frames work on some individuals, and backfire for others.

Although the four theories above can account for some aspects of the public opinion gap on climate change, questions remain. Why do individuals develop the particular attitudes and beliefs that lead them to deny climate change? In the sections that follow, we present an identity theory of climate change denial. Drawing on identity theories from psychology and sociology, we describe how climate change narratives can pose a threat to certain identities, causing a rejection of climate change evidence and climate change denial. We then present an identity theory of belief formation that holds better explains the public opinion gap on climate change. Our theory builds off of the explanatory mechanisms above, incorporating them into a conception of identities that guide climate change beliefs.

An Identity Theory of Climate Change

As political scientists and economists seek to explain phenomena not easily addressed by narrow psychological models of human motivation, they are increasingly turning to the concept of identity as an alternative explanation (Akerlof & Kranton, 2000; Huddy, 2001). Identity, of course, has long been an important concept in psychology and sociology (James, 1890; Mead, 2009; Vygotsky, 1980; Wertsch, 1991). Although there is a small literature on identity and the environment (Clayton & Opatow, 2003; Stets & Biga, 2003), few scholars have examined the link between identity and climate change (see, as an exception, Jaspal, Nerlich, & Cinnirella, 2014).

It is useful to begin by defining what we mean by identity. The term "identity" can be used either as sociological concept referring to a person's identification as a member of a societal group (ethnicity, gender, sexual preference, nationality, etc.), or as a psychological concept referring to a person's sense of self and of having a personal history (Stryker & Burke, 2000). In our use of identity, the sociological and psychological are intertwined (Stets & Burke, 2000), and we acknowledge the extent to which the self is at once socially constructed but also a product of personal experience (Mead, 2009).

Identities are established and maintained, in part, through narrative. We are story-telling animals, who remember in story, make sense through story, and are moved by story (Gottschall, 2012; F. W. Mayer, 2014). Identities are the narratives that we tell about ourselves. When we have strong identities, we are able to see ourselves as a stable actor with a history and a trajectory, and to anticipate how we will react in different situations. Identities also help us appear predictable to others, and others predictable to us. Perhaps most importantly, identities provide us with a sense of belonging, generating well-being, comfort and protection (G. M. Breakwell, 1983; Jaspal et al., 2014).

The role of narrative also helps to explicate why we have not one but many identities. Our identities correspond to our various affiliations, gender, sexual identity, ethnicity and nationality, political or interest group affiliation, occupation or avocation, as well as to roles established by more personal life histories, as a survivor, a leader, an advocate for the poor, etc. Our sociological identities are invoked by identification with group that is the lead character in the story at hand. For example, if the context is one of conflict between our nation and others, our patriotic identity is

likely to come to the foreground. Our more personalized identities are invoked when we see ourselves as the actor in the drama of the moment.

It is important to note how identities are at once stable and dynamic. Identities themselves are a fairly stable construct – an individual will not easily shift from being a staunch liberal to a solid conservative. We have a strong urge to maintain our identities (Huddy, 2001). Indeed, when information seems to challenge an identity, we experience cognitive dissonance and reinforce our identity and the contrary attitudes it carries with it. Several authors have found evidence of the power of threatened identities in reaffirming prior beliefs (Glynis M. Breakwell, 1986; Ethier & Deaux, 1994; Jaspal et al., 2014; Murtagh, Gatersleben, & Uzzell, 2012).

This sensitivity to threat provides the basis of our identity theory of climate change beliefs. When identity is at stake, emotions run high and orthodoxy in belief becomes more important. If one wants to reason about evolution with a fundamentalist Christian or about welfare dependency with a liberal social worker, starting with an attack on fundamentalism or on naïve liberalism is not likely to get one very far. Messages that invoke dissonant identities are not likely to change beliefs.

While identities themselves are stable and susceptible to threat, the relative salience of our multiple identities is more dynamic and driven by narrative. Which of our identities is salient depends on the context in which we find ourselves, on the story in which we are engrossed. The ability to tell different stories about a circumstance enables us to invoke different identities. It matters whether the story of a poor child is told as one in which a mother is helpless to support her or as a tale in which welfare programs enabled a mother's irresponsibility. The first may trigger our identity as a parent, the second our identity as a political conservative.

In the cases of interest in this paper, raising the salience of identity serves to reinforce attitudes and beliefs about issues that are intertwined with that identity (G. M. Breakwell, 1983; Murtagh et al., 2012). The construction of climate change in our modern political discourse threatens certain American identities, and it is this identity threat that explains much of the climate change denial that we observe in public opinion polls. The following section describes three identities that are particularly susceptible to identity threat by the discourse of climate change, and provides suggestions for how the salience of these identity threats could be reduced through narrative.

Climate Change Identities

Many identities might be invoked by climate change. Most obviously, one would expect that those with an environmental identity would be more prone to believe in anthropogenic climate change (Whitmarsh & O'Neill, 2010). Although at one level obvious, it is worth exploring just what it might mean to have an “environmental identity” and how such an identity would affect how we process information about climate change, which we will shortly do. It is not just environmental identity that may be at play in the discourse about climate change. In particular, three other identities of importance in American politics may generate attitudes of climate change denial: Christian fundamentalism, American individualism, and American capitalism. None of these are inherently anti-environmental, but all three can be threatened by environmental messages and undergird anti-environmental beliefs. These three identities are commonly grouped together as a conservative identity, and indeed, all are variants of contemporary conservative political identity. However, we distinguish here among them both because we see different narratives at work and because the differences have implications about how climate change communication might best be framed. Our list of identities is neither mutually exclusive nor collectively exhaustive. Nor do we make any claim about the relative frequency of these identity types. Rather, our purpose is to demonstrate how these identities affect the beliefs of those who hold them.¹

Environmentalist

While 70% of Americans consider themselves active in or sympathetic to the environmental movement (Dunlap, 2007), *environmental identities* flow along a spectrum. Two types of narratives correspond to two bases for environmental identity identified in the literature, and individuals can have different levels of salience of each base (S. D. Clayton & Opatow, 2003; Stets & Biga, 2003). The first are personal narratives in which individuals see their personal identity as shaped by their experience or interaction with nature. A sense of tranquility from walking in nature can generate a

¹ It may be helpful to note the relationship between our identity types and Leiserowitz et al's (2011) “Six Americas.” Their taxonomy provides a very useful description of positions on climate change on a spectrum from highly worried and engaged (“alarmed”) to disbelief and resistance to action (“dismissive”), a major improvement over the typical yes/no questions in surveys on climate change. The taxonomy, however, does not address what underlines those stances, and thus, on its own, provides little guidance as to how one might shift them.

low-level environmental identity of this type. The second type is an environmental protection narrative in which individuals see themselves as part of a movement to protect nature from forces that threaten it. Both types of narratives tend to produce positive affect towards nature, what is sometimes referred to as *biophilia*, as well as a somewhat suspicious attitude towards those elements of modern life that seem to distance us from it. The environmental protection narrative carries with it more negative attitudes towards those forces, usually big business, that are cast as the villains in the environmental drama. Beliefs about climate change are highly correlated with pro-environmental attitudes. This is particularly true for those whose environmental identity is established by the environmental protection narrative, for whom the belief that human behavior causes climate change fits perfectly, and who perceive climate rejection as motivated by economic self-interest.

Fundamentalist Christian

In keeping with our narrative definition of identity, *fundamentalist Christians* are those who believe in the literal truth of the Bible. They see themselves as witnesses in a world of unbelievers, as soldiers in a battle against secular elites who threaten their religious values and lifestyle (Day, 2011; Wilcox & Robinson, 2010; Wuthnow, 1989). It is no accident that they speak of a “war on Christianity” or a “war on Christmas.” (See, for example, Gibson *The War on Christmas*, indeed a whole genre of such books available on Amazon, or Bill O’Reilly’s annual treatment on *Fox News*.) James Dobson, a prominent leader of the religious right, is quoted in Wilcox and Robinson (2010, p. 1) as warning believers that “a formidable army is being assembled” of those “who hate the Christian system of values.” For fundamentalist Christians, the highest value is faith. Among the attitudes associated with the fundamentalist identity are suspicion of and resentment towards elites, including scientists who promote theories such as evolution and the Big Bang that run counter to the Biblical creation story (Armstrong, 2011; Castells, 2011; Marsden, 2006).

It is not obvious that fundamentalist Christians would be climate deniers, but a majority are (Pew Research Center, 2014a). As constructed by the religious right, climate change has become part of the perceived attack on Christian faith. For example, a 12-part series of videos entitled “Beware the Green Dragon,” backed by a who’s who of the Christian right, seeks “to expose how the environmental movement is out to control the world and destroy Christianity” (Mantyla, 2010). The narrative most threatened by climate change is that God commanded man “to be fruitful and multiply, fill the earth and rule over it,” in Genesis 1:28, and made a covenant with man that he

would never flood the earth again in Genesis 9:11. Jim Inhofe, newly installed chair of Senate Environment and Public Works Committee, references that covenant when he asserts that: "The greatest hoax clearly is the idea that man is causing climate change," he said. "That's a very arrogant thing to think that man has the ability to do that" (Tashman, 2015).

For fundamentalists, pronouncements by scientists about the importance of science feeds into the sense of secular elites attacking religion, causes cognitive dissonance with how they understand the world, and results in a boomerang effect. By making a fundamentalist identity more salient, these communications increase resistance to the science. For example, in the face of mounting evidence pointing to climate change as the cause of extreme weather, 77 percent of white evangelicals (a close analog to Christian fundamentalists) recently attributed extreme weather to "what the Bible calls 'end of times' " (Koronowski, 2014).

A different narrative, however, could reduce the threat of climate change to the fundamentalist identity: the tradition of stewardship of the earth. In this interpretation of the Bible, God asks man to be a steward of the environment, as when he asks Noah to tend the Garden of Eden in Genesis 2:15, or in Ezekial 34:17-18, when he asks "As for you, my flock... Is it not enough for you to feed on good pasture? Must you also trample the rest of your pasture with your feet? Is it not enough for you to drink clear water? Must you also muddy the rest with your feet?" Statements about climate change prefaced with references to these Biblical references may be less likely to be apprehended as attacks on fundamentalist identity, and therefore decrease resistance to the message.

Individualist

A second familiar American identity that can become threatened by climate change communication is that of the rugged *American Individual*: self-reliant, independent, and free. This type has a long pedigree in American popular culture, from the Daniel Boone myth to the American Western hero (Slotkin, 1973). It resonates with an interpretation of the American Revolution as a battle for freedom, as exemplified by the original Boston Tea Party, the Sons of Liberty, and Minute Men (all referenced in contemporary political culture) (Lepore, 2011; Williamson, Skocpol, & Coggin, 2011). American individualists identify with those fighters for freedom, and see themselves (to some degree) as heirs to the battle against tyranny, seeking escape from the constraints of civilization. Arguably, the highest value for American individualists is freedom. They are, therefore, highly

skeptical of government and especially of rules that might undermine their autonomy. They tend also to be highly nationalistic, even nativist, in their outlook. As Gross et al summarize (Gross, Medvetz, & Russell, 2011), this type of conservative is essentially suspicious of modernity and desires to return to what is thought to have been a simpler and freer time.

The relationship of the individualist identity to climate change is complicated. On the one hand, many individualists have strongly positive feelings towards nature as something to be enjoyed and a place of freedom from the impingements of government, modernity and daily life. This attitude towards nature has a long tradition in American culture, exemplified by Thoreau's writings, but going back well before to the recurring themes of escape into the wilderness in the American imagination (Buell, 1995). On the other hand, American individualists tend to view the environmental movement that arose in the 1960s as a pro-regulatory movement, and are therefore receptive to frames portraying climate change proponents as part of the vast (international!) threat to freedom.

Because of these available narratives, the stance of American individualists on climate change is not entirely determined. Climate change could be viewed as a danger to self-sufficiency and to nature, and taking action to combat it as consistent with identity. But when the discourse turns to the need for government policy and international agreements, and those who oppose such measures are vilified, identity is threatened and American individualists are prone to see climate change as part of the conspiracy of liberals, governments and international organizations to take away American freedoms.

Capitalist

A third identity relevant to climate change is the *American capitalist*. American capitalists see themselves as actors in the making of America, the ones who create wealth and jobs, the engines of America's progress in the world. In this narrative, they are opposed by a coalition hostile to business: government regulators and bureaucrats, liberal interest groups, and the "takers" (in the parlance of Ayn Rand), who live on government hand-outs. They have great faith in private enterprise and deep skepticism of government (Gross et al., 2011). Ronald Reagan was their great champion and they agree with his aphorism that "government isn't the solution, it's the problem." For them, great wealth is deserved and unproblematic, indeed their heroes include liberals Bill Gates and Warren Buffett, in their roles both as wealth creators and, more recently, as much-

heralded philanthropists in the tradition of Carnegie and Rockefeller. At the extreme, they view themselves as part of historic battle between free enterprise and socialism (or even communism).

With regard to climate change, American capitalists are not inevitably skeptical. They do not share the general anti-science orientation of many fundamentalists, or the anti-elite mindset of American individualists. Indeed, many with a direct economic stake in believing in climate change, either as a business threat or as an opportunity, agree with the science of climate change. Nevertheless, when they hear government officials, scientists, environmentalist talk about climate change, they can easily interpret it as part of the larger pattern of bureaucratic efforts to impose costs and constraints on them and make it harder for them to compete in the global economy. And when they are cast as the villains in the story, as the causers of climate change, the threat to their identity can be a strong motivation for climate denial. An effective alternative narrative would be to focus on the potential green business opportunities resulting from climate change mitigation, and how public demand for sustainability results in a shift in market opportunities.

Clearly, these do not exhaust the relevant identities with the potential to be invoked and lead to climate change denial. And individuals holding these identities may also have other identities that could counteract climate change denial. National identities may come into play in the context of international negotiations, party identities in the context of elections, and parental identity in thinking about long-term consequences, among others. But the identities discussed above do demonstrate the promise of an identity theory to explain better the remarkable persistence of mistaken beliefs about climate, the emotional content of those attachments, and the emotional “rally round the flag” responses to discordant messages.

Implications for Framing Climate Change

Each of us has many identities. How climate change is framed in public discourse will partly determine which of those identities are made salient and, therefore, what attitudes are invoked and beliefs established about climate change (Hoffman, 2011; M. Nisbet, 2009b; Spence & Pidgeon, 2010b). For environmentalists, particularly those whose identity is shaped by the environmental protection narrative, a news story about the latest scientific study showing higher ocean water temperature accompanied by calls for stronger governmental regulation and dismissive statements about climate skeptics, can be environmental identity affirming, reinforcing anxieties about the fate of the earth, positive attitudes towards scientists, and solidarity with allies engaged in the

movement. It is therefore likely to be believed. A news story about elements of the business community lobbying against regulations or taxes, accompanied by statements denying climate change, may also make environmental identity more salient by reinforcing the narrative of struggle against business interests, reaffirming negative attitudes towards them, and therefore deepening commitment to beliefs that climate change is happening.

The same stories, however, may have quite different impacts on those with identities discussed above. For fundamentalist Christians, that science story could easily be heard as one more case of secular elites dismissing people like me, and, therefore, also be interpreted as a challenge to their identity, invoking negative attitudes towards climate scientists and other elites, and deepening resistance to their message. The observed result is that the story might actually *increase* climate rejection (Hart & Nisbet, 2012b). Similarly, for American individualists, the climate science story may be understood in the context of the battle between freedom and government control. This will trigger an identity response, with its accompanying attitudes of distrust of government and other elites, and also serve to reinforce rather than counter climate rejection. For American capitalists the science story may be somewhat less identity invoking, but the business lobbying story, on the other hand, is likely to be identity invoking and reaffirming, resonating with the core identity narrative of American business in conflict with those who would hold it back, reaffirming positive attitudes towards those standing up for them and negative attitudes towards wasteful and unnecessary regulation.

This line of thought has considerable implications for how one might want to communicate about climate change. Given that it is difficult to change identity, the greater emphasis should be on avoiding climate change stories that trigger identity responses. For example, given the propensity of Christian fundamentalists to view themselves in conflict with a secular world, a simple recognition of those elements of faith that are compatible with acting on climate change, notably the Biblical admonition of stewardship of the earth, can (partly) defuse the tendency to view climate science as a threat to religious identity. Or, given the tendency of American individualists to see policies to combat climate change as loss of freedom, stories that focus on how climate change itself will reduce the ability of small farmers to make a living, of hunters to hunt, of fishers to fish, are less threatening to identity and therefore more likely to be positively received. And for business types, communication that portrays them less as the villains behind the problem and more as the potential heroes in solving it are much more likely to be received positively.

Conclusion

This essay makes an innovative contribution to the climate change communications literature by offering an identity theory of climate change beliefs as a useful way to understand how and why so many Americans continue to deny anthropogenic climate change. Our theory, building on the social identity literature, focuses on the salience of certain individual identities that are threatened by climate change policies and the current climate change narrative. When one of these identities is salient within an individual, communications about climate change cause an emotional, visceral reaction which further strengthens the identity in order to maintain personal coherence and predictability. In the case of the three climate denier identities discussed, this results in further denial of climate change.

We also identify how the use of frames in climate change communications can work to make threatened identities less salient within an individual. Avoiding climate change stories that trigger reactionary identity responses, and recognizing the elements of each identity that can generate a positive response to climate change, are important ways to leverage the role of identities in shaping climate change beliefs. In combination with existing explanations for climate change denial, a theory of identity in determining climate change beliefs provides a deeper and more nuanced explanation for phenomenon such as boomerang effects and the emotional rejection of any evidence of climate change by many Americans.

We note that this essay is largely theoretical, not empirical. We align ourselves with empirical work that has been done concerning environmental identities (Bliuc et al., 2015; Crompton & Kasser, 2010; Jaspal et al., 2014; Whitmarsh & O'Neill, 2010), as well as additional theoretical contributions about the role of environmental identities in determining our beliefs (S. Clayton, 2003; S. D. Clayton & Opatow, 2003). In addition, some preliminary original empirical results provide support for the role that environmental identities can play in beliefs about climate change. In an experiment conducted in November 2014 through the Amazon Mechanical Turk service, an individual's environmental identity was shown to be a stronger predictor of concern about climate change compared to partisan identity (Pechar, 2014)².

² A preliminary survey experiment pretested using Amazon Mturk in November, 2014 showed that priming an individual's environmental identity results in stronger concern about climate change for those with a pro-



Future empirical work testing the identities described in this paper, their alignment with climate change beliefs, and the effect of different narratives on the identity salience is an important next step. To do this, we propose to first create a series of identity measures, similar to the Environmental Identity Scale (EID) proposed by Susan Clayton (S. Clayton, 2003), for each of the identities we are interested in. A fundamentalist Christian identity scale, for example, might include measures for the extent to which the individual sees God as an active force in the world's events. An Individualist identity scale would include items measuring attitudes towards a conflict between tyranny and freedom. The next step would be a manipulation of the salience of these identities through different types of climate change communications. Combining an individual's score on the identity scale for each identity, we would then see how we different climate change messages resonate with different people. Our expectation is that the framing of messages about climate change would impact an individual based on the salience his or her identity.

It is clear that there is no single explanation for the prevalence of climate change denial in America. While several explanatory models have been proposed and widely discussed in the literature, questions remain as to how people develop their beliefs, and why so many people hold so passionately to attitudes that run counter to the scientific consensus on climate change. Further questions arise when considering the myriad of attitudes that individuals have regarding climate change. Through an identity theory of climate change beliefs, we pay attention to the diversity in identities held by Americans, and how climate change communications may seem to threaten these identities. While more research is needed to formalize the identities most susceptible to climate change communications, it is a promising venture to help guide future policymakers and communicators about how to message the threat of climate change.

environmental identity and weaker concern about climate change for those with an anti-environmental identity, compared to the results for priming partisanship (which showed less polarization on climate change).



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