

**ENVIRONMENTAL ACTIVIST IDENTITY MEDIATES THE
RELATIONSHIP BETWEEN PERCEIVED THREATS TO
THE ENVIRONMENT AND MORE SUSTAINABLE
CONSUMER BEHAVIORS**

by

Daphne Payne
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APPROVAL

Name: Daphne Payne
Degree: Master of Arts
Title of Thesis: Environmental Activist Identity Mediates the Relationship between Perceived Threats to the Environment and More Sustainable Consumer Behaviors

Examining Committee:

Chair: Tom Spalek
Associate Professor

Michael Schmitt
Senior Supervisor
Associate Professor

Stephen C. Wright
Supervisor
Professor

Hannah Wittman
External Examiner
Assistant Professor

Date Defended/Approved: May 17, 2011



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ABSTRACT

Our western Industrialized society's trend of excessive consumption results in negative health effects both for humans and the environment. To combat these negative trends, people must actively reduce their consumption to promote a more sustainable lifestyle and thereby a healthier Earth. In this paper I consider what factors encourage people to engage in behaviors that mitigate threats to the environment. In particular, I consider the consequences of two ways of defining the self—identification with the environment, and identification with environmental activists. In both Study 1 and Study 2, identification with environmental activists mediated the relationship between perceived threats to the environment and pro-environmental behaviors and mediated the relationship between identification with the environment and pro-environmental behaviors. These results suggest that promoting a collective identification with a group whose goal is to protect the environment is an important way to motivate people to partake in environmentally-friendly behaviors.

Keywords: environmental activist identification; pro-environmental behaviors; environmental identification; collective guilt

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1: INTRODUCTION

In Western society, excessive levels of consumption directly affect both the environment and human health, with potentially catastrophic consequences over the long run. Agricultural industrialization is an impending ecological problem; agricultural land expansion increases the number of animals species threatened with extinction, encourages farmers to use pesticides that have negative health effects for both animals and humans and contributes to global warming by releasing large amounts of greenhouse gasses (Tilman, 1999). Increasing demands for oil for driving and flying, have led some to mine the tar sands of Alberta. This mining alone contributes to half of all greenhouse gas emissions in Canada (Bramley, Neabel & Woynillowicz, 2005). The sulphur released from mining in Alberta returns to the Earth as acid rain in neighboring lands (Environment Canada, 2004). The pipelines holding the oil have ruined forests and wetlands, decreasing species population in the habitat around the pipelines by as much as 80% (Dyer, 2006). In an effort to deal with excessive waste, landfills are expanding and their leakage has been linked to health problems such as lower birth weights, neonatal deaths and increases of cancers of the stomach and liver in humans living near the area (Vrijheid, 2000). In order to mitigate these destructive trends, humans must dramatically reduce their consumption of resources. At the individual level, this could mean making more sustainable choices about consumption that take into account the carbon

footprint, waste, and toxicity and pollution of different consumptive behaviors. In this paper, I consider factors that might encourage people to engage in behaviors that mitigate threats to the environment. In particular, I examine the role of different ways of defining the self on intentions to engage in pro-environmental behaviors such as sustainable food choices, transportation decisions, and waste avoidance.

1.1 Perceived environmental threat and sustainable consumer behaviors

One factor that encourages attempts at sustainability is the perception that there is a threat to the environment. Knowledge of the causes of global warming is correlated with greater concern for the effects of global warming (Malka, Krosnick & Langer, 2009). People who believe the environmental risks of global warming are severe are more likely to express support for mitigation policies and more willing to make pro-environmental consumer choices on transportation decisions, energy emissions and recycling (Lubell, Zahran & Vedlitz, 2007). However, the psychological process by which perceived threats to the environment affect sustainable consumer choices remains relatively unexplored. In this paper, I examine this process in terms of social identity theory. The social identity framework revolves around the concept that people do not restrict their identity to their individual person; they can, and often do, identify with abstract social categories (Tajfel & Turner, 1986; Turner, et al., 1987; Turner, Oakes, Haslam, & McGarty, 1994). When people identify with a group they are more likely to partake in actions that promote that group's interests and are consistent

with that group's norms (Terry & Hogg, 1996). This paper considers two forms of social identification that might mediate the relationship between perceived threats to the environment and making sustainable choices by reducing one's consumption: identification with the environment, and identification with environmental activists.

1.2 Identification with the environment

One factor that might mediate the relationship between perceived environmental threats and reduced consumption is identification with the environment. Although social identity research has rarely considered people's identification with categories that are inclusive of non-humans, there is evidence that people do identify with categories that go beyond the human level to include the natural world. The first nations, for example, include the natural world as a part of their identity both in their culture and their individual selves. They believe it a necessary component of the four elements of life- physical, mental, emotional and spiritual (Wilson, 2003). More generally, research suggests the natural environment is a beneficial component of people's lives; exposure to both companion animals and natural settings (rolling green hills, trees) are linked to decreased anxiety and a longer life. (Frumkin, 2001). Clearly this suggests people can connect on some level with the natural environment. In other words, people can identify with the category of "the natural environment"--seeing themselves as similar to and interdependent with other species in the natural world and presumably want to act in ways which protect that category.

In this paper, I consider whether identification with the environment might mediate the relationship between perceived threat to the environment and pro-environmental behaviors. In other words, might threat encourage identification with the environment, which in turn, predicts pro-environmental behaviors? The perception that a category one belongs to is under threat can, under certain conditions, encourage identification with that category (Branscombe, Schmitt & Harvey, 1999). According to social identity theory (Tajfel & Turner, 1986), if the ingroup is not easy to exit, and the threat can be mitigated, people respond to ingroup threats with increased identification with the threatened category. Therefore, assuming people believe that threats to the environment can be mitigated, the perception that the environment is under threat will likely encourage a person's identification with the environment and consequently result in behaviors which protect the environment.

There is evidence that people who identify with the natural environment not only engage in the natural world (by spending leisure time outdoors; Hinds & Sparks, 2008), but act to protect it (Davis, Green & Reed, 2009). Participants who reported a greater overlap between the "self" and "nature" were more likely to engage in environmentally friendly behaviors such as re-using shopping bags or taking public transportation to reduce gas emissions. In a second study participants were primed with either high connection to the environment, where they were asked to answer questions that elicited thoughts of a dependency on nature such as "Describe one or two ways in which you feel connected to the environment" or a low-connection condition in which participants answered

questions that elicited thoughts of an independence from nature. Those who were primed with a high connection were more likely to engage in pro-environmental behaviors when making decisions about commuting and shopping (e.g. by re-using bags). Similarly, Schultz (2000) found that participants expressed greater concern for the environment when asked to write from the perspective of another species in the natural world than when asked to write from an “objective” perspective. Schultz encouraged participants to view themselves as a part of nature, thus encouraging them to see themselves in the same social category as nature. Once participants viewed themselves in the same social category as nature they were more likely to be concerned when animals and other elements of nature were under threat.

Thus, a perception that there are threats to the environment could encourage identification with the environment and this identification could then encourage behaviors that alleviate these threats to the environment. I examine the mediating role of identification with the environment in the relationship between perceived environmental threat and pro-environmental behaviors.

1.3 Identification with environmental activists

Environmental activist groups work to protect the environment; as such, identifying with these groups could be an important motivator to act sustainably and make an effort to decrease consumption. Identification with a group encourages people to behave in ways that correspond with the group’s norms and values (Terry & Hogg, 1996; Terry, Hogg & White, 1999). The norms of environmental activists are to participate in sustainable behaviors to alleviate

damages to the environment. In fact, research has found evidence that an individual's identification with environmental activists is a predictor of intention to engage with the environment and pro-environmental behaviors (such as waste behaviors, transportation decisions and shopping choices) (Fielding, McDonald & Louis, 2008; Whitmarsh & O'Neil, 2010).

While there is evidence that identification with environmental activists predicts pro-environmental behaviors, in order to mediate its relationship with pro-environmental behaviors, threats to the environment must also be positively related to identification with activists. From a social identity perspective (Tajfel & Turner, 1986), one reason why people form groups is to collectively address threats that they cannot address successfully as individuals. Because no individual acting alone can do much to address threats to the environment, the perception of threats to the environment likely encourage people to identify with others who pool their energies to address environmental threats collectively. Thus, assuming that people perceive that mitigation of threats to the environment is possible, the perception of threat will encourage identification with activists groups. Furthermore, I predict that identification with environmental activists mediates the relationship between perceived threats to the environment and participating in pro-environmental behaviors.

Because identification with environmental activists and identification with the environment are likely correlated with one another, it is necessary to examine these two levels of identification concurrently to determine each identity's unique role in mediating the relationship between threats to the environment and pro-

environmental behaviors. Simon et al. (1998) examined different levels of identification with both older people and gay people. In each case, the specific activist identification (“Grey Panthers” older people activist group and a gay rights activist group) was more predictive of behaviors that support their goals than identification with the broader social category (older people or gay people). Work by de Weerd & Klandermans (1999) supports this notion. Dutch farmers, a disadvantaged group at the time of the study, were more likely to participate in events that promoted the status of their group when they were part of an active Dutch farmer political organization than when they just felt a strong bond to other Dutch farmers. Similarly, identification with environmental activists might be a more important predictor of pro-environmental behaviors than identification with the more abstract category of the environment.

In addition, measuring these two levels of identification simultaneously allows me to examine the possibility that identification with the environment has a positive relationship with pro-environmental behaviors that is mediated by identification with activists. In fact, Simon et al.’s (1998) work with the “Grey Panthers” suggests a mediational role of identification with “Grey Panthers” (an older people’s activist group) between the relationship of identification with older people and behaviors that support their group. That is, identification with the more general category older people leads to a more specific activist identification, “Grey Panthers”, which then predicts movement participation. Thus, I also test the hypothesis that identification with environmental activists

mediates the relationship between identification with the environment and pro-environmental behaviors.

2: STUDY 1

In this study I measure participants' belief in environmental threat, their identification with the environment, and their identification with environmental activists. I then ask about their pro-environmental consumer behaviors, relating to transportation decisions, food choices, and general consumption habits. I predict that perceived threats to the environment will be positively related to willingness to engage in pro-environmental behaviors. The main goal of this research is to test the unique mediating roles of identification with the environment and identification with activists in the relationship between perceived threats to the environment and pro-environmental behaviors. Specifically, while controlling for identification with the environment, identification with activists will mediate the effects of perceived threats to the environment and pro-environmental behaviors. Although both of these potential mediators have been shown to predict environmental sustainability (Hinds & Sparks, 2008; Davis, 2008; Fielding, McDonald & Louis, 2008; Whitmarsh & O'Neil, 2010), neither have been shown to mediate the effects of perceived environmental threats. In another advance of previous research, I will be examining the effect of both types of social identification *simultaneously*, and thus, testing the unique mediational role of activist identification controlling for environmental identification. Finally, I

will test whether identification with the environment has an indirect relationship with pro-environmental behaviors, mediated by identification with activists.

2.1 Method

2.1.1 Participants and procedure

Participants were recruited from a pool of undergraduate students at Simon Fraser University who participated for course credit (N=82, 46 female, 35 male and 1 not specified). Participants completed a questionnaire after providing informed consent. The questionnaire (see Appendix A) included four measures: Environmental Threat, Identification with the Environment, Identification with Environmental Activists, and Pro-environmental Behaviors.

2.1.2 Materials

2.1.2.1 Environmental threat

I measured perceived threats to the environment with a composite of 5 items measuring beliefs about threats to current environmental conditions, $\alpha=.48$.

2.1.2.2 Identification with the environment

I measured identification with the environment with 4 items from Clayton's well-established Environmental Identity Scale (Clayton, 2003) that measures multiple ways in which people include nature into their self-concept. I used the 4 items that are most clearly based on a social identity theory conceptualization of identification $\alpha=.87$. Other items in her measure included questions asking

recreational habits and aesthetic ratings, items which are not applicable to a social identification with nature.

2.1.2.3 Identification with activists

I measured identification with activists using Leach's in-group identification scale (Leach, et. al, 2007), adapted to measure identification with environmental activists. This scale is composed of 12 items that measure identification with environmental activists, $\alpha=95$.

2.1.2.4 Pro-environmental behaviors

I measured pro-environmental behaviors with a composite of behaviors that indicate people's attempts to be sustainable in their food choices (by eating organically and less meat) and commuting decisions. These items also measure people's willingness to educate themselves and other people on the environmental effects of their consumption. The items are similar to other measures of pro-environmental behavior (e.g., Kaiser et al., 2003), and were chosen because of their applicability to University participants.

2.2 Results

Consistent with predictions (see Table 1), participants' perceptions of threats to the environment were related to pro-environmental behaviors. The main focus of this study was to test whether identification with the environment and identification with environmental activists mediate the relationship between perceived threats to the environment and pro-environmental behaviors. As

shown in Table 1, environmental threat was positively related to both potential mediators-- identification with the environment and identification with activists.

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Environmental threat	4.78	0.92	1	-	-	-
2. Identification with the Environment	3.96	1.26	0.25*	1	-	-
3. Identification with Activists	3.50	1.17	0.24*	0.58**	1	-
4. Pro-Environmental Behaviors	4.20	1.08	0.56**	0.43**	0.66**	1

Table 1. Correlations, means and standard deviations of the variables in Study 1. Note
 * $p < .05$, ** $p < .01$

To examine the unique contribution of each mediator, I simultaneously entered threats to the environment and both potential mediators into a multiple regression model predicting consumer behaviors. Mediation was assessed statistically using Sobel's z. Sobel's z tests the significance of a mediated relationship. In other words, do the paths from independent variable to mediator, and from mediator to dependent measure together account for a significant relationship between independent and dependent variables (Sobel, 1982)?

Supporting my predictions (see Figure 1), identification with activists did predict pro-environmental behaviors ($\beta = .56$, $p < .001$) and mediated its relationship with threats to the environment ($z = 1.97$, $p = .05$). However, identification with the environment did not predict pro-environmental behaviors when the more specific identification of environmental activist was in the model ($\beta = .00$). I next tested whether identification with the environment had an indirect relationship with pro-environmental behaviors mediated by identification with

activists. To test the path from identification with the environment to identification with activists, I first entered threats to the environment and identification with the environment into a multiple regression model predicting identification with activists. To examine the second path in the proposed mediation, from identification with activists to pro-environmental behaviors, I regressed consumption on perceived threats, identification with activists, and identification with the environment (as in the prior mediational analyses). Consistent with my predictions, identification with the environment (while controlling for perceived threat) predicted identification with activists ($\beta = .56, p < .001$), and identification with activists mediated the relationship between identification with the environment and pro-environmental behaviors ($z = 4.03, p < .001$).

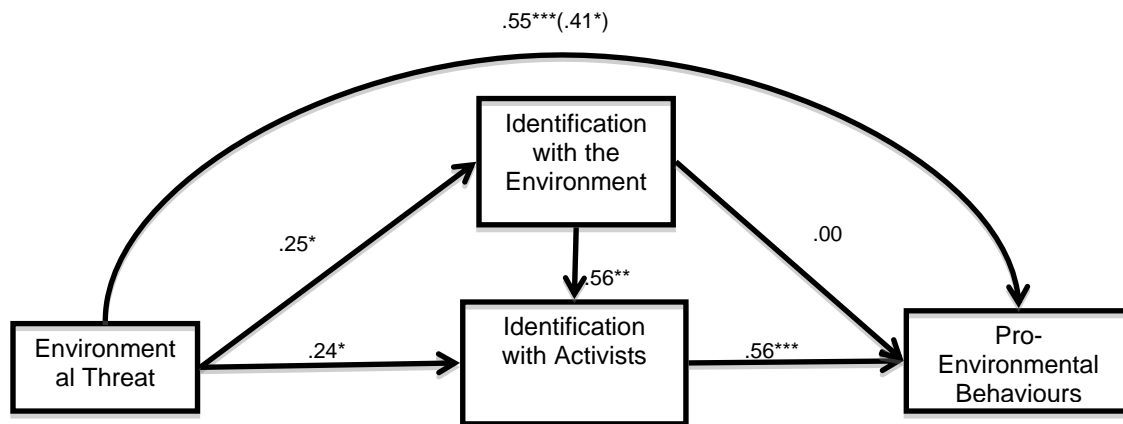


Figure 1. Mediation model of the variables in Study 1. Standardized coefficients reported, indirect relationship in parentheses. Note $*p < .05$, $**p < .01$, $***p < .001$

2.3 Discussion

Consistent with my predictions, Study 1 showed that perceived environmental threat was positively associated with pro-environmental behaviors,

identification with the environment and identification with environmental activists. Identification with activists mediated the relationship between perceived threats to the environment and pro-environmental behaviors when controlling for identification with the environment. This is consistent with prior work indicating an activist identity is a predictor of behaviors that support that activist group (Simon et al., 1998) and, more specifically, identity with environmental activists predicts pro-environmental behavior (Fielding, et al., 2008; Whitmarsh & O'Neill, 2010). However, my results go further in that they suggest identification with activists mediates environmental threats' relationship with pro-environmental behaviors.

Identification with the environment did not predict pro-environmental behaviors; however, it did have an indirect relationship with pro-environmental behaviors mediated by identification with activists. This is consistent with Simon et al.'s (1998) work with activist groups, a broader social category identity can have an effect on movement behaviors in the form of a specific activist group. In our study, identification with the environment can influence pro-environmental behaviors if people identify with environmental activists, thus acting in accordance with environmental activist's norms.

A couple limitations of Study 1 were that I used two different measures for identification with the environment and identification with activists. Because I am examining these concurrently and comparing the different levels of identification it is necessary to have parallel measures. Also, my measure of pro-environmental behaviors measured only a limited sector of sustainable behaviors

consumers can engage in (food options, commuting decisions and people's education about the consequences of their consumer choices).

3: STUDY 2

I next conducted a study to replicate and extend the findings of Study 1, and to correct for some of its limitations. In Study 1, I measured environmental identification and activist identification concurrently, however, I used a different operationalization of identification for each identity. Because identification with the environment and identification with activists were measured using different sets of items, there is a possibility these scales were measuring different dimensions of group identification rather than identification with different categories per se. To remedy this, in Study 2 I use Cameron's (2004) measure of social identification (which measures an individual's identification or connection with a category) adapted for each identity—the environment, and activists. Therefore, I can engage in a more direct comparison between identification with the environment and identification with activists, as the measures differ only in the category they reference—environmental activists or the natural environment. I also expand the measure of pro-environmental behaviors to a 20-item measure. In Study 1 I measured people's habits with organic food choices and transportation decisions, in Study 2 I also include items measuring energy use, waste behaviors and consumption, providing a more robust measure of pro-environmental behaviors.

In addition, I consider another possible mediator of the relationship between perceived threats to the environment and pro-environmental behaviors-- collective guilt over humans' harm to the environment. In Study 1 I found that environmental activist identification was a mediator in the relationship between perceived environmental threats and pro-environmental behaviors. There is a possibility that an individual's identification with environmental activists or with the environment could be correlated with their collective guilt over harm to the environment. Therefore, it is important to control for collective guilt as a potential alternative mediator when examining the role of identification with activists.

Collective guilt has been examined as a predictor of a group's behaviors to make amends for harm-doing (Branscombe, Slugoski & Kappen, 2004). Guilt is experienced by an individual when that individual feels they have done something to produce unjustified harm to others (Weiner, 1995). Because people can identify either at the "individual" or "collective" level, they can experience emotions at both the "individual" and "collective" level (Tajfel & Turner, 1986). Thus, "collective guilt" is experienced by people who feel that their group has committed unjust harm (Branscombe, Slugoski & Kappen, 2004). Collective guilt leads to support for actions that alleviate the damage done to the harmed out-group (Doosje et al., 1998).

Similarly, people who perceive that the human ingroup has unjustly harmed the natural environment are likely to feel collective guilt on behalf of humans (Ferguson & Branscombe, 2010). In turn, collective guilt over humankind's harm to the environment is likely to motivate people to mitigate that

harm. Research has found that even people's anticipated guilt over harm to the environment (that they would feel if they did not act sustainably) predicts their pro-environmental behavioral intentions such as shopping choices and recycling (Kaiser et al., 2008). Logically, then, when humans feel guilty for the harm caused to the environment, they will be more likely to participate in actions that alleviate that harm. Indeed, Ferguson and Branscombe (2010) found that participants' collective guilt over their nation's harm to the environment predicted support for pro-environmental behaviors and social policies. They also found collective guilt to be a significant mediator of beliefs about human caused global warming and mitigation behaviors.

Collective guilt over human's harm to the environment is likely to be encouraged by perceived threats to the environment, and is also likely to predict sustainable behaviors. Thus, in this research I also test the prediction that collective guilt, while controlling for identification with the environment and identification with activists, mediates the relationship between perceived threat and pro-environmental behaviors. I also examine the same predictions as in Study 1, but using the new measures and controlling for collective guilt. I predict that perceived threats to the environment will be positively related to pro-environmental behaviors. I also test the mediating role of identification with activists and collective guilt in the relationship between perceived threats and pro-environmental behaviors. Finally, I will test whether identification with activists will mediate the relationship between identification with the environment and pro-environmental behaviors.

3.1 Method

3.1.1 Participants and procedure

Participants were recruited from a pool of undergraduate students at Simon Fraser University who participated for course credit (N=152, 103 female, 49 male). The procedure was identical to Study 1, only the materials were different. The questionnaire (see Appendix B) consisted of 5 scales (Perceived Environmental Threat, Identification with the Environment, Identification with Environmental Activists, Collective Guilt and Pro-Environmental Behaviors).

3.1.2 Materials

3.1.2.1 Environmental threat

I measured perceived threats to the environment with the same measure as in Study 1, a composite of items measuring beliefs about threats to current environmental conditions, $\alpha=.69$.

3.1.2.2 Identification with activists and identification with the environment

I measured both identification with activists ($\alpha=.84$) and identification with the environment ($\alpha=.87$) using Cameron's well-established self-report measure of social-identity (2004) adapted to measure each identification, making them parallel and thus correcting for the disparity of measures in Study 1.

3.1.2.3 Collective guilt

I measured collective guilt over human's harm to the environment using the guilt acceptance subscale developed by Branscombe, Slugoski & Kappen

(2004), adapted to measure acceptance of collective guilt of human's harm to the environment, $\alpha=.90$.

3.1.2.4 Pro-environmental behaviors

I measured pro-environmental behaviors using a composite of 20 items measuring sustainable choices consumers can make in a variety of daily decisions, from commuting to purchasing goods to considering the amount of greenhouse gas emissions in one's actions, $\alpha=.90$.

3.2 Results

Consistent with predictions (see Table 2), participants' perceived threat to the environment was significantly correlated with pro-environmental behaviors. In addition, threats were positively related to all three potential mediators: identification with the environment, identification with activists and collective guilt. I next examined identification with activists, and collective guilt as mediators of the relationship between perceived threats to the environment and pro-environmental behaviors. To examine the unique contribution of each mediator in accounting for perceived threats to the environment in pro-environmental behaviors, I simultaneously entered threats to the environment and all three potential mediators into a multiple regression model predicting pro-environmental behaviors. Mediation was assessed statistically using Sobel's z (Sobel, 1982).

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Environmental Threat	4.84	0.88	1	-	-	-	-
2. Identification with the Environment	4.61	0.83	0.23**	1	-	-	-
3. Identification with Activists	3.87	0.78	0.29**	0.50**	1	-	-
4. Collective Guilt	5.06	1.16	0.48**	0.34**	0.38**	1	-
5. Pro-Environmental Behaviors	3.95	0.93	0.32**	0.38**	0.50**	0.44**	1

Table 2. Correlations, means and standard deviations of the variables in Study 2. Note
**p<.05, **p<.01*

Consistent with predictions (see Figure 2) identification with activists predicted pro-environmental behaviors ($\beta=.33, p<.001$) and mediated its relationship with threats to the environment ($z=2.78, p=.005$). Collective guilt also predicted pro-environmental behaviors ($\beta=.24, p=.004$) and mediated its relationship with threats to the environment ($z=2.68, p=.007$). Identification with the environment did not predict pro-environmental behaviors ($\beta=.10$)

I next tested whether identification with the environment had an indirect relationship with pro-environmental behaviors mediated by identification with activists. To test the path from identification with the environment to identification with activists, I first entered threats to the environment and identification with the environment into a multiple regression model predicting identification with activists. To examine the second path in the proposed mediation, from identification with activists to pro-environmental behaviors, I regressed pro-environmental behaviors on perceived threats, identification with activists, collective guilt and identification with the environment (as in the prior meditational analyses). Consistent with predictions, identification with the environment

predicted identification with activists ($\beta = .46, p < .001$) and identification with activists mediated the relationship between identification with the environment and pro-environmental behaviors ($z = 3.50, p < .001$).

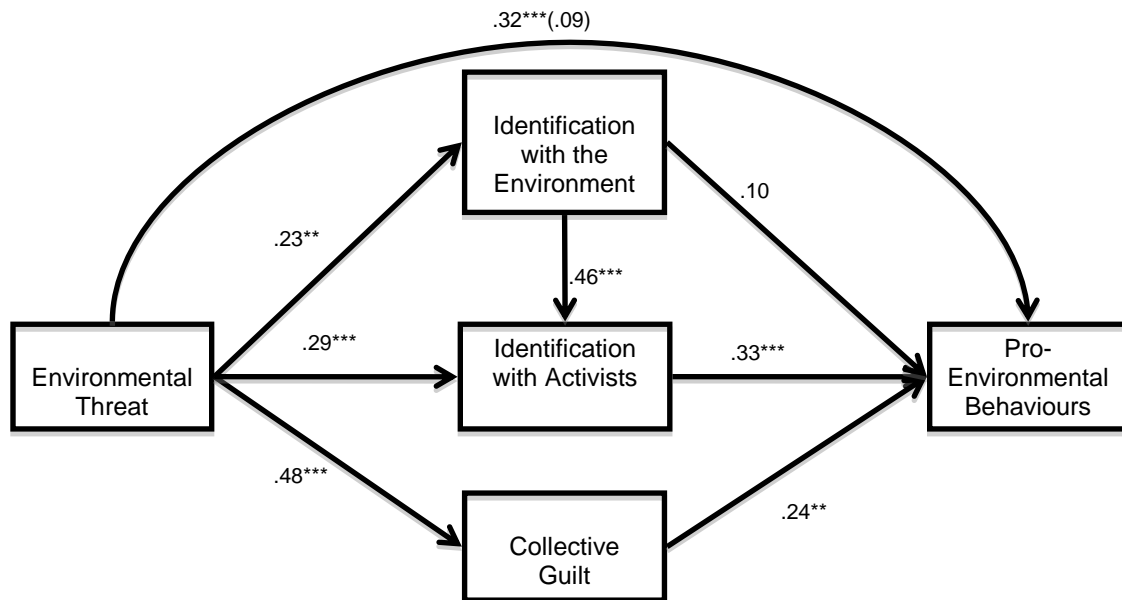


Figure 2. Mediation model of the variables in Study 2. Standardized coefficients reported, indirect relationship in parentheses. Note $*p < .05$, $**p < .01$, $***p < .001$

3.3 Discussion

Consistent with my predictions, in Study 2, perceived environmental threat was positively associated with identification with the environment, identification with activists, collective guilt and pro-environmental behaviors. Moreover, both collective guilt and identification with activists independently mediated the relationship between perceived environmental threats and pro-environmental behaviors. Importantly, identification with activists mediated the relationship even when controlling for collective guilt. This supports our findings from Study 1 and indicates that guilt over human harm to the environment does not account for

identification with activists' relationship with choosing more pro-environmental decisions.

Also, identification with the environment had an indirect relationship with pro-environmental behaviors in that identification with activists mediated its relationship with pro-environmental behaviors. This, again, supports our findings from Study 1, but using a parallel measure to identification with activists and thus allowing for a more direct comparison of the two levels of identification. An identification with the environment can be important to making pro-environmental choices, but its effect appears to be fully mediated by identification with environmental activists.

4: GENERAL DISCUSSION

Prior work shows perceived threat to the environment leads to behaviors aimed at protecting the environment (Lubell, Zahran & Vedlitz, 2007). The two studies presented here are the first to examine how social identities might mediate this relationship between perceived threats and actions to mitigate those threats. We found in both studies that identification with environmental activists mediated this relationship, and that this was true even when controlling for identification with the environment (Studies 1 & 2) and collective guilt over human's harm to the environment (Study 2). In Study 2, collective guilt over human's harm to the environment also partially mediated the relationship between threat and pro-environmental behaviors. In both studies, identification with the environment was not directly related to pro-environmental behaviors, but

it did indirectly relate to these behaviors via its relationship with identification with activists.

4.1 Activist identity

Like prior work (Fielding, McDonald & Louis, 2008; Whitmarsh & O'Neil, 2010), we found a positive relationship between identification with activists and pro-environmental behaviors. However, unlike prior work, we showed that identification with activists predicted pro-environmental behaviors even when controlling for identification with the environment and collective guilt.

Furthermore, these studies were the first to show that identification with activists plays a mediating role in the relationship between perceived threats to the environment and mitigation behaviors.

Environmental activist groups exist to ameliorate threats to the environment, so perceived environmental threats are an essential precursor for environmental activist groups to exist. Individuals who identify with environmental activists then act in accordance to the group's norms (Terry & Hogg, 1996), mainly by making pro-environmental consumer choices. When people feel they have a common bond with other people who are actively working to protect the environment, they will feel more compelled to align with those people's actions, and even in their individual choices, behave consistently with the goals of environmental activism. Our results suggest identification with activists is important when motivating consumers to make pro-environmental choices when buying food, regulating their waste behaviors and making transportation decisions.

4.2 Identification with the environment

In both studies, identification with the environment was not a direct predictor of pro-environmental behaviors. Although prior research has found a positive relation between identification with the environment and acting to protect it (Davis, Green & Reed, 2009), those prior studies did not control for the influence of identification with activists as I did. I found that in terms of promoting an individual's decision to make more pro-environmental choices it is more advantageous for individuals to identify with a specific activist group rather than the larger, more general, category of environment. Our results are consistent with Simon et al.'s (1998) work with group identification. Just as Simon et al. (1998) found identification with the "Grey Panthers" (an activist group advocating for the rights of elder people) was a stronger indicator of elder people movement activities than an identification with elder people in general, we found identification with environmental activists to be a stronger indicator of pro-environmental behaviors than identification with the broader category of the natural environment.

These results question the utility of getting people to connect with the environment in order to protect the environment. However, while identification with the environment is not a significant direct predictor of pro-environmental behaviors, I found it does have an indirect relationship by predicting identification with activists. Simon et al. (1998) also found that identification with the broader social category can have an indirect effect of participation in behaviors to support the group in that the specific activist identification can mediate the relationship

between this broad category identification and group behaviors. Our results support this idea, they show identification with the environment has an indirect relationship on pro-environmental behaviors in that identification with activists mediates the relationship between identification with the environment and pro-environmental behaviors.

4.3 Collective guilt

Supporting prior work (Ferguson & Branscombe, 2010), collective guilt over human's harm to the environment partially mediated the relationship between perceived threats and more sustainable behaviors. However, identification with activists was a significant mediator even when controlling for collective guilt, so guilt cannot account for activist identification's mediational role. Rather, both guilt and identification with activists have independent relationships with pro-environmental behaviors, and mediate a unique relationship between threats to the environment and these behaviors.

My results are consistent with the idea that guilt over harm to the environment can motivate attempts at sustainability. However, as an intervention, attempting to evoke guilt over harm to the environment to motivate people to act pro-environmentally might encounter resistance, as guilt is an aversive emotional state and threatens the integrity of an ingroup identity (in this case, humans). Indeed, Ferguson & Branscombe (2010) found that participants presented with information that environmental threats were severe and human-caused became defensive and were less likely to act pro-environmentally. More generally, it is reasonable to expect that attempts to encourage environmental sustainability

might evoke feelings of guilt—a predictable response to perceiving that human behaviors have harmed the environment and thus future generations. Indeed, threats to environment can lead to a number of negative emotional experiences (e.g., fear, anxiety, hopelessness) that could make people resistant to information about threats to the environment, and perhaps more receptive to messages that counter claims of environmental threat (Moser & Dilling, 2004). Attempting to evoke collective guilt is a risky strategy, but feelings of guilt may be hard to avoid when making people aware of humans' harm to the environment. Groups and individuals who want to encourage environmentally-friendly behavior must take into account the negative emotional responses that people experience in response to environmental threat. In that regard, identification with environmental activists might provide social support that can attenuate the negative emotional consequences of perceiving environmental threat. Indeed, Klar & Kasser (2009) found that activism, and more specifically an identification with other activists, was positively associated with well-being.

4.4 Limitations and future directions

The main limitation of this study is that these are correlational data. There is some experimental evidence for identification with the environment predicting participation in pro-environmental behaviors (Davis, Green & Reed, 2009) and identification with activists predicting group-supporting behaviors (Simon et al., 1998), but we cannot make definite conclusions of the cause-effect relationships in our study. Future work could further establish the causal direction of these relationships, and explore reasonable alternative directions and feedback loops.

For example, although I focused on the effects of perceived threat on activist identification, it is also reasonable to assume that as a function of their activism, people who identify more with environmental activists might come to know more about threats to the environment. The study participants were all University students, limiting the generalizability of our findings. Also, restricting the sample to University students restricts the range of pro-environmental behaviors I could examine (e.g., most students don't own a home on which to make efficiency improvements).

My studies found a positive relationship between identification with environmental activists and pro-environmental behaviors; suggesting that if people feel alienated from environmental activists they will be less likely to make more pro-environmental consumption choices. Therefore, it is important for activist groups to create a connection with the broader public if they hope to persuade them to make pro-environmental decisions. Our results indicate that the perception of threat to the environment is one way to create such a connection with environmental activists, but it would be valuable for social scientists and environmental activist groups to consider what other factors might encourage or discourage this connection.

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APPENDICES

Appendix A

Environmental Threat

1. Life as we know is under imminent threat.
 2. If humans don't dramatically change their relationship to the earth, the damage done will be beyond repair.
 3. Over-consumption is posing a serious risk to human-kind and life on planet earth.
 4. Human technology will overcome environmental problems, just as it always has.
 5. The likelihood of global environmental devastation is low.
- 1=strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5=agree somewhat; 6= agree; 7= strongly agree

Identification with the Environment

1. I think of myself as a part of nature, not separate from it.
 2. I feel that I have a lot in common with other species.
 3. Being a part of the ecosystem is an important part of who I am.
 4. In general, being part of the natural world is an important part of my self-image.
- 1= not at all true of me; 2= untrue of me; 3= somewhat untrue of me; 4= neither true nor untrue; 5= somewhat true of me; 6= true of me; 7= very true of me

Identification with Activists

1. I define myself as an environmental activist.
 2. When someone criticizes environmental activists, it feels like a personal insult.
 3. I feel a bond with environmental activists.
 4. I feel solidarity with environmental activists.
 5. I feel committed to environmental activism, its causes, goals and actions.
 6. Being an environmental activist is central to who I am.
 7. Being an environmental activist is an important reflection of who I am.
 8. Being an environmental activist is an important part of my self-image.
 9. I am similar to the typical environmental activist.
 10. I have things in common with environmental activists.
- 1= strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5= agree somewhat; 6= agree; 7= strongly agree

Pro-Environmental Behaviors

1. I try to buy organic food rather than conventionally grown food as often as I can.
 2. I try to educate myself about ways to promote environmental sustainability.
 3. I try to educate friends and family on environmental sustainability
 4. I try to take energy use and greenhouse gas emissions into consideration when making commuting decisions.
 5. I consider eating more plants (e.g., fruits, vegetables, grains and legumes) and less meat.
- 1= not at all true of me; 2=untrue of me; 3=somewhat untrue of me; 4=neither true nor untrue; 5=somewhat true of me; 6= true of me; 7= very true of me

Appendix B

Environmental Threat

1. Life as we know is under imminent threat.
 2. If humans don't dramatically change their relationship to the earth, the damage done will be beyond repair.
 3. Over-consumption is posing a serious risk to human-kind and life on planet earth.
 4. Human technology will overcome environmental problems, just as it always has.
 5. The likelihood of global environmental devastation is low.
- 1= strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5= agree somewhat; 6= agree; 7= strongly agree

Collective Guilt

1. I feel regret for human's harmful actions toward the environment.
 2. I feel guilty about the negative things humans have done to the environment.
 3. I feel regret for some of the things humans have done to the environment.
 4. I can easily feel guilty for the bad outcomes to the environment brought about by humans.
- 1= strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5= agree somewhat; 6= agree; 7= strongly agree

Identification with Activists

1. I have a lot in common with environmental activists.
 2. I feel strong ties to environmental activists.
 3. I find it difficult to form a bond with environmental activists.
 4. I don't feel a sense of being "connected" with environmental activists.
 5. I often think of myself as an environmental activist.
 6. Overall, being an environmental activist has very little to do with how I feel about myself.
 7. In general, being an environmental activist is an important part of my self-image.
 8. The idea that I am an environmental activist rarely enters my mind.
 9. In general, I'm glad to be an environmental activist.
 10. I often regret that I am an environmental activist.
 11. I don't feel good about being an environmental activist.
 12. Generally, I feel good when I think about myself as an environmental activist.
- 1= strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5= agree somewhat; 6= agree; 7= strongly agree

Identification with the Environment

1. I have a lot in common with other species.
2. I feel strong ties to other parts of nature.
3. I find it difficult to form a bond with the natural world.
4. I don't feel a sense of being "connected" to the natural world.
5. I often think about the idea that I am part of a larger ecosystem.
6. Overall, being a part of a larger natural world has very little to do with how I feel about myself.
7. In general, being a part of the larger natural world is an important part of my self-image.
8. The idea that I am part of a larger natural world rarely enters my mind.
9. In general, I'm glad to be part of a larger ecosystem.

10. I often regret being a part of the natural world.
 11. I don't feel good about being a part of the natural world.
 12. Generally, I feel good when I think about myself as part of a larger natural world.
- 1= strongly disagree; 2= disagree; 3= disagree somewhat; 4= neither agree nor disagree; 5= agree somewhat; 6= agree; 7= strongly agree

Pro-Environmental Behaviors

1. I buy organic food rather than conventionally grown food as often as I can.
 2. I educate myself about ways to promote environmental sustainability.
 3. I educate friends and family on environmental sustainability.
 4. I eat more plants (such as vegetables, fruits, legumes, and grains) and less meat.
 5. I take energy use and greenhouse gas emissions into consideration when making commuting decisions.
 6. I decrease the amount of time that I use products requiring electricity or batteries each week.
 7. I adjust the lighting in my residence so that it is a little darker than I like it at night.
 8. I turn off lights when I am leaving a room.
 9. I decrease the amount of water that I use during baths and showers.
 10. I allow the temperature of my showers to be a little colder than I like them.
 11. I encourage my family and friends to reduce greenhouse gases and energy consumption.
 12. I buy locally produced food rather than food from far away.
 13. I reduce my consumption overall (having fewer material goods).
 14. I often talk to people about environmental issues.
 15. I use reusable containers rather than disposable ones.
 16. I often mend my clothes rather than buying new clothes.
 17. I buy used goods rather than buying new goods.
 18. I reduce my use of paper.
 19. I reduce the frequency with which I travel by air.
 20. I walk, bike, or take public transit rather than travelling by car.
- 1= not at all true of me; 2=untrue of me; 3=somewhat untrue of me; 4=neither true nor untrue; 5=somewhat true of me; 6= true of me; 7= very true of me