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The Consumer as Climate Activist

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Consumption of green products is growing rapidly in the United States. We assessed the extent to which this consumption is motivated by a desire to promote societal-level change in corporate practices that affect the climate, and posit a social–cognitive model in which people's global warming beliefs and consumer activism beliefs predict their green purchasing goals, behavior, and opinion leadership. Using nationally representative survey data, we tested the model and found a good fit: Global warming and consumer activism beliefs predict people's green purchasing goals, which in turn predict green purchases and opinion leadership. These results suggest that communication that creates concern about global warming and enhances beliefs about the power of consumer action is likely to stimulate green consumption.

Keywords: consumer activism, climate change, efficacy, opinion leadership, involvement

The literature on risk communication has shown that people tend to take protective actions when they recognize their vulnerability to a serious threat and believe that recommended threat-reduction responses are both effective and feasible (Floyd, Prentice-Dunn, & Rogers, 2000; Witte & Allen, 2000). This perspective has guided a great deal of research on health communication, and is now being applied to the issue of climate change (e.g., Hart & Feldman, 2014; Kim, Jeong, & Hwang, 2013).

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Perceptions that threat responses are ineffective or infeasible are likely to be greater barriers to climate action than to protective health behaviors because of multiple factors: Climate change is a massive *collective action* problem, and the effects of any single individual's behavior may be perceived as distal and small as compared with, say, the effects of quitting smoking on the smoker's health. Many people are unsure which actions will effectively reduce the threat, and structural barriers increase the difficulty of some effective actions (e.g., the distance between suburbs and city centers and a lack of mass transit options may make greener transportation choices difficult). These barriers can contribute to feelings of low self- and response efficacy (Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007). Nonetheless, over half of Americans believe that if most in the United States acted as they themselves act, it would reduce global warming "a lot" or "some" (20% and 35%, respectively; Leiserowitz, Maibach et al., 2014); this suggests that people perceive their own actions as potentially efficacious.

Of the many possible ways individuals can reduce their own environmental impact, one particular behavior, the consumption of greener products, is widespread and growing in the United States. Between 2001 and 2011, for example, the organic food industry grew at a rate of 238%, compared with 33% for the overall food market; sales of organic nonfood products more than quadrupled between 2002 and 2011; and the number of homes with solar panels grew more than 10-fold between 2006 and 2013 (Green America, 2013; Wisland, 2014). The degree to which these purchases are driven by concerns about climate change is unclear, however, as there are many potential motivations for buying greener products and services.

Research Objectives

In this study, we assessed beliefs and objectives that underlie green purchasing[1] by Americans. We examined the degree to which such purchases are motivated by the societal-level goal of promoting corporate action on climate change,[2] and compared these activist motivations with more personal, ethical consumption objectives.

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[1] We use the terms *green purchasing* and *green consumption* throughout this article to refer to the purchase and use of products that are less harmful to the natural environment or climate. We do not refer to this as *sustainable consumption*, which implies reductions in overall consumption along with consumption of green products. Nor do we use the terms *ethical consumption*, *socially conscious consumption*, *political consumption*, or *conscious consumption*, as all of these are broader categories that may encompass green purchasing, but also refer to purchases mindful of social justice, fair trade, workers' rights, and cruelty-free production. We do not use the term *climate activism* to refer to all green purchases because consumers may choose green products for reasons unrelated to activism, and we reserve use of the term *climate activism* to actions that are intended to influence corporate behavior—either directly through purchases, or indirectly, through attempts to influence the purchases of others.

[2] We use *global warming* and *climate change* interchangeably. Among climate scientists, the term *climate change* is preferred, but among Americans, *global warming* is more familiar, is used more often (Leiserowitz, Feinberg et al., 2014), and is the term used in the study's questionnaire. In general, we use *climate change* to refer to the phenomenon and *global warming* in references related to the questionnaire items, as in "global warming beliefs."

The model of consumer activism we constructed and tested is an extension of a social–cognitive model shown to predict political activism on climate change (Roser-Renouf, Maibach, Leiserowitz, & Zhao, 2014) and is grounded in social–cognitive theory (Bandura, 1986, 2000). As a general theory of human behavior, social–cognitive theory encompasses threat-reduction responses in a more general understanding of goal-directed behavior that is motivated by beliefs about the outcomes of actions—both positive and negative—and people's perceptions of their ability to take actions with positive outcomes.

The political activism model has demonstrated that beliefs about the threat and solvability of climate change foster both affective issue involvement (i.e., emotional engagement with the issue, in terms of viewing it as both worrisome and personally important) and injunctive beliefs (i.e., beliefs that society should respond to the threat). People who are involved and support a societal response are likely to engage in opinion leadership and political activism if they believe activism is effective and their self-efficacy is high.

The model did not, however, take into account people's multiple motives, which may encompass more than threat reduction, and may include, for example, social and identity rewards. Political activism can be motivated in part by its personal and social benefits (Brady, Verba, & Schlozman, 1995; Klandermans, 2004), and consumption of green products is also likely to be motivated by nonpolitical benefits. This study thus contributes to research on the motivations, goals, and behaviors of green consumers and consumer activists (Atkinson, 2012, 2015; Shah et al., 2007; Willis & Schor, 2012) by examining the extent to which green consumption behavioral goals are the product of beliefs about the threat and solvability of climate change.

We differentiated two potential goals for green consumption: *social impact goals*, in terms of promoting a larger societal response to climate change by influencing the behavior of corporations and other consumers, and *personal green consumption goals*, which may be motivated by a variety of anticipated rewards. The study assessed the strength of these goals as predictors of the consumption of green products and services and the extent to which people who hold these goals act as opinion leaders to encourage green purchasing among their friends and family.

We proposed that people would seek to influence companies both directly, through their own consumption, and indirectly, through interpersonal communication and opinion leadership, to the extent that they are concerned about climate change, recognize it is solvable, and believe corporations will respond to consumer activism. We also anticipated that at least some people who purchase green products do so for personal reasons rather than as a form of climate activism. Hence, we anticipated that social impact goals would be more reflective than personal green consumption goals of global warming beliefs, and that social impact goals would more strongly shape consumption opinion leadership than personal green consumption goals would.

Key Beliefs That Drive Climate Change Issue Engagement

Prior research has shown that four key global warming beliefs are central to people's evaluation of the issue: (1) certainty that climate change is occurring (threat recognition), (2) belief that it will be

harmful (risk perception), (3) recognition that humans are causing climate change (a belief underlying collective response efficacy[3]), and (4) belief that human actions are capable of reducing the threat of climate change (collective response efficacy). These beliefs predict perceived issue seriousness (Krosnick, Holbrook, Lowe, & Visser, 2006), affective issue involvement (Roser-Renouf et al., 2014), support for national mitigation action and policies (Ding, Maibach, Zhao, Roser-Renouf, & Leiserowitz, 2011; van der Linden, Leiserowitz, Feinberg, & Maibach, 2015), and political activism (Roser-Renouf et al., 2014).

This study adds an additional form of efficacy to reflect the collective action challenges of climate change, that is, belief that one's own actions would reduce global warming if undertaken collectively by others in the United States and other industrialized nations. This construct is a form of individual response efficacy bridging individual and collective response efficacy. It is highly unlikely that anyone believes that his/her own actions can significantly reduce global warming—at most they reduce the individual's own footprint—but the added belief that collective enactment of these actions would successfully reduce global warming may be a powerful motivator for personal behavior.

Thus, we expected that people who hold the four key global warming beliefs, as well as the belief that their own actions—collectively performed—can reduce global warming, would have higher affective issue involvement and stronger injunctive beliefs (i.e., beliefs that societal mitigation action should occur).[4] Issue involvement—as reflected in being interested in an issue, believing it has personal importance, and being emotionally involved—has been shown to increase people's attention to issues, their political participation, and their opinion leadership (Brady et al., 1995; Petty & Cacioppo, 1986; Shah & Scheufele, 2006). Involvement thus provides the drive to take action, and injunctive beliefs direct the drive toward actions promoting a wider societal response to climate change.

H1: *People who hold the key beliefs that global warming is real, human-caused, dangerous, and solvable by their own and by collective action will (H1a) be more affectively involved with the issue and (H1b) hold stronger injunctive beliefs that societal action is needed to reduce the threat.*

Choosing Consumer Action as a Response to Climate Change

People who are affectively involved with the issue of climate change and who believe societal action is needed must appraise how to respond. Surveys suggest that for many Americans, the behavioral

[3] If humans are not creating climate change, it is unlikely that we can reduce it.

[4] Our measures and conceptualization of injunctive beliefs are similar to the personal normative beliefs contained in the value–belief–norm model (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). The value–belief–norm construct focuses on beliefs about what should be done *by society* and *by the respondent personally.* Our construct is similar, but does not include the personal dimension of the construct, focusing instead on respondents' desired response from government, corporations, and citizens. The collective focus of our measures reflects the importance of collective action on climate change. We renamed the construct "injunctive beliefs," given the strong focus on what *should* occur.

response of choice is consumption of sustainable products and services. In 2013, 29% of Americans said that they had, over the prior year, rewarded companies taking steps to reduce global warming by buying their products; in contrast, only 9% said that they had contacted a legislator in support of action to reduce global warming (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Howe, 2013).

We expected that consumers who are motivated to support greener businesses as a response to climate change do so because they view the purchases as both effective and feasible (Bandura, 1986; Witte & Allen, 2000). Strong efficacy beliefs regarding effectiveness and feasibility enable motivated individuals to form goals, formulate and pursue actions to achieve those goals, and persist in the face of obstacles and setbacks. The stronger the efficacy beliefs, the higher the goals and the greater the commitment to achieving them (Bandura, 1989).

Hence, we anticipated that people who are motivated to take action on climate change—as reflected in their (1) affective involvement and (2) injunctive beliefs—and who (3) believe that their own consumer actions are effective in changing corporate behavior would view green consumption as a means to achieving social change. As a result, they would form the goals to promote social change through their purchases.

H2: People who are more affectively involved with the issue; hold stronger injunctive beliefs that people, corporations, and governments should take action to mitigate climate change; and have stronger beliefs that their own actions can influence corporate behavior will hold (H2a) stronger social impact goals for their purchases and (H2b) higher personal green purchasing goals.

Green Consumption's Other Motivations and Rewards

Research on the drivers of political activism has found that people who become activists believe that the social movement they are joining has the chance to succeed, and that their participation improves the movement's chances of success (Burstein, Einwohner, & Hollander, 1995; Finkel, Muller, & Opp, 1989). There are, however, additional drivers of political activism: People may become politically active in response to social influence (someone asks them to participate) or because they derive social and personal identity rewards from their participation (Brady et al., 1995; Klandermans, 2004).

Similarly, there are other, more personal motivations for green consumption: In many social circles, green consumption is viewed as morally correct, thereby providing both social rewards, in terms of community and sense of belonging, and personal identity rewards, in terms of status and prestige (Griskevicius, Tybur, & Van den Bergh, 2010). Brand communities can arise out of mutual appreciation for and consumption of products and services, leading to the development of strong, other-oriented attitudes, such as trust and reciprocity (Muniz & O'Guinn, 2001). In the context of fair trade consumption, which entails concerns for both workers' rights and environmental protection, in-depth interviews indicate that this kind of consumption builds social capital and engenders community-minded goals (Shaw, Newholm, & Dickinson, 2006).

Still other research has indicated that social and identity rewards can also entail a self-oriented focus intent on maximizing individual benefits. For example, ethnographic research has demonstrated that conspicuous consumption (i.e., wasteful expenditures on the purchase of expensive items) is a form of signaling, a way for individuals to indicate to others that they have sufficient economic capital to waste on costly or ineffective items, thereby accruing greater social status and prestige (Bird & Smith, 2005). Griskevicius and colleagues (2010) have shown similar patterns in the context of green consumption in particular. Competitive altruism and costly signaling become especially salient for those products that are visibly consumed, such as hybrid cars, and for items that are seen as more expensive and/or less effective, such as environmentally friendly cleaning products (Griskevicius et al., 2010).

These more personal motivations for green consumption are consistent with Stern's (2000) definition of *environmental consumption* as "private sphere environmental behavior" (p. 409) rather than activism. Some social theorists contend that green consumption actually represents a retreat from social action: They argue that green consumption positions the solutions to climate change in the marketplace and not in the political sphere, thereby focusing on individual lifestyle choices that reinforce the status quo rather than collective action that challenges consumer culture (Giddens, 2009; Katz-Kimchi & Atkinson, 2014; Kurz, Augoustinos, & Crabb, 2010). Consumer activism thus displaces political participation, individualizes action, directs people away from the political arena where real changes must be made, and promotes self-protection. People may avoid buying toxic products, for example, instead of engaging in political action to remove such products from the market (Szasz, 2007); they may be civic-minded in their consumption only when it serves their self-interest (Atkinson, 2012).

Consumer choices may reflect purely self-interested or activist motivations, but it is likely that for many people, they reflect both (Atkinson, 2012). The decision to purchase organic food, for example, might involve concerns about both personal health and the environment, and the decision to install solar panels might be motivated by environmental concern as well as a desire to save money over the long term.

In light of the many possible motivations for choosing greener products, we anticipated that climate change issue engagement and the perceived effectiveness of consumer activism would be stronger predictors of social impact goals than of personal green purchasing goals, which may reflect anticipated outcomes that are unrelated to climate change.

H3: *Consumer activism response efficacy and climate change issue engagement—as reflected in affective issue involvement and injunctive beliefs—will be more strongly predictive of social impact goals than of green purchasing goals.*

Green Consumption, Opinion Leadership, and Consumer Activism

We expected that the green consumption and social impact goals people set for themselves would translate into behavior: Those who hold these goals will buy more green products and services. Although behavioral goals are not always identical to behavioral intentions, they are closely related, with proximal goals, such as recycling, virtually identical to intentions, whereas more distal goals, such as

influencing the behavior of corporations, are less so. A meta-analysis of meta-analyses found that 28% of the variance in behaviors is explained by behavioral intentions (Sheeran, 2002), and a meta-analysis focused solely on proenvironmental intentions and behaviors had essentially the same result (R^2 = .27; Bamberg & Möser, 2007). Thus, we anticipated that goals, like intentions, would predict behaviors.

Green purchases may or may not represent climate activism, contingent on the outcomes being pursued. Central to the question of whether green consumption signals personal, private benefits or represents climate activism is the role of social influence and the power of opinion leadership. Consumption is an inherently social pursuit, and green consumption is no exception (Buenstorf & Cordes, 2008). Studies of political communication and opinion leadership have repeatedly shown that people with high interest in issues and high political self-efficacy are information-seekers who act as opinion leaders, influencing the opinions of those around them (Dalrymple, Shaw, & Brossard, 2013; Nisbet & Kotcher, 2009; Shah & Scheufele, 2006). Green consumers also tend to be information-seekers and opinion leaders who share information with others (Shrum, McCarty, & Lowrey, 1995). Specific to climate change, research on political activism has shown that climate change opinion leaders tend to be high on all four key beliefs regarding its reality, cause, threat, and solvability (Roser-Renouf et al., 2014).

Hence, we expected that those whose climate change beliefs and consumer activism response efficacy beliefs have motivated them to form social impact and personal green consumption goals would act as opinion leaders regarding green consumption. We further expected that opinion leadership would be more strongly predicted by social impact goals than by personal green consumption goals in light of the multiple potential motivations people may have for holding personal green consumption goals, only some of which are related to promoting social change.

H4: *People with higher social impact and personal green purchasing goals will be more likely to (H4a) engage in opinion leadership on green purchases and (H4b) purchase green products and services.*

H5: *Social impact goals will be significantly stronger predictors of opinion leadership than personal green consumption goals will be.*

Method

Survey data were gathered online from members of a nationally representative, 55,000-member panel recruited and maintained by the research firm GfK Knowledge Networks. The panel is an online, nonvolunteer, probability-based panel, recruited using random digit dialing and address-based sampling. Membership closely tracks the Current Population Survey (published by the U.S. Census Bureau and the Bureau of Labor Statistics) on major demographics.

In April 2013, a sample of 2,222 panel members was randomly selected and invited to participate in the survey; 1,045 responded, for a survey completion rate of 47.1%. The survey took approximately 25 minutes to complete, and asked a range of questions about global warming beliefs, policy support, and climate-relevant actions. Sample characteristics are shown in Table 1.

Table 1. Sample Characteristics.

Characteristic	Statistic
Mean (*SD*) age (years)	46.8 (17.2)
Female, %	51.9
Non-Hispanic White, %	66.8
Education, %	
Less than high school	12.2
High school completed	29.8
Some college	28.5
Bachelor's degree or higher	29.5
Income, %	
<$30,000	24.3
$30,000–59,999	26.5
$60,000–99,999	24.9
≥$100,000	24.3
Political affiliation, %	
Republican	26.6
Democrat	32.8
Independent	25.1
Other/none	15.5
Geographic region, %	
Northeast	18.3
Midwest	21.5
South	37.0
West	23.2

Measurement

The model tested in this study contained eight constructs: green purchasing opinion leadership, green purchasing, social impact goals, personal green purchasing goals, consumer activism response efficacy, injunctive global warming beliefs, affective issue involvement, and key global warming beliefs. All but two of the measures for the first four constructs were adapted from Willis and Schor (2012). Two green purchasing measures (buycotting and boycotting) and all measures of the latter four constructs were developed by the authors to assess the constructs discussed in the literature review.[5] Affective issue involvement and injunctive belief measures were used in Roser-Renouf and colleagues' (2014) study of climate change political activism. That study also employed a measure of political activism response efficacy, which was adapted here to assess consumer activism response efficacy. Confirmatory factor analysis within the structural equation model was used to assess the unidimensionality of the indicators of the latent constructs.

[5] The key beliefs were adapted from Krosnick et al. (2006); injunctive beliefs were adapted from Stern et al. (1999); efficacy beliefs were based on Bandura's (1986) conceptualizations and measurement recommendations.

Green purchasing opinion leadership was assessed with four items: frequency of discussing environmental impacts of products and companies' environmental practices with family and friends, spreading this information through the Internet, and searching for information on environmental impacts of products. All items used 4-point scales from 1 = *never* to 4 = *often* (Cronbach's α = .80).

Green purchasing was assessed with seven measures of consumption over the past year: boycotting and buycotting companies, based on their mitigation opposition or efforts (1 = *never*, 5 = *many times* [6+]); frequency of purchases of local and organic produce, reduced consumption of meat, and green investments (1 = *never*, 4 = *often*); and purchases from environmentally friendly businesses (0 = no, 1 = yes; Cronbach's α = .74).

Personal green purchasing goals were assessed with seven items. The first asked (1) how often respondents consider the environment when making purchases on a 5-point scale from 1 = *never* to 5 = *very consistently*. This was followed by questions asking how important several considerations are when deciding which products to buy: The products (2) do not damage the environment, (3) are recyclable, (4) use few resources, (5) do not contribute to global warming, (6) promote the well-being of future generations, and (7) allow the respondent to live simply. Questions were measured with 5-point scales from 1 = *not at all important* to 5 = *essential* (Cronbach's α = .94).

Respondents who said that they never consider the environment when deciding what to purchase were not asked the subsequent questions regarding how important various environmental considerations were to them. For these respondents, the skipped items were recoded as *not at all important*.

Social impact goals were assessed with four items on the same 5-point importance scales, asking how important respondents consider the following when making purchases: The product or service (1) promotes social change, (2) allows the respondent to educate others about responsible purchases and (3) to act as a role model, and (4) communicates to corporate America that people will pay more for products that reflect their values (Cronbach's α = .90). Respondents who said that they "never" consider the environment when deciding what to purchase were again recoded as saying that environmental social impact goals were "not at all important" to their purchase decisions.

Affective issue involvement was assessed using two measures: personal importance on a 5-point scale from 1 = *not at all important* to 5 = *very important*, and worry on a 4-point scale from 1 = *not at all worried* to 4 = *very worried* (Spearman–Brown coefficient = .84).

Injunctive beliefs were assessed with four measures using 5-point scales that asked whether more or less should be done to address global warming by corporations and industry, citizens themselves, the U.S. Congress, and President Obama. The scales ranged from 1 = *should be doing much less* to 3 = *doing about the right amount* to 5 = *should be doing much more* (Cronbach's α = .93).

Consumer activism response efficacy was assessed with a single item asking, "How much do you think your actions influence companies?" using a 4-point response scale from 1 = *not at all* to 4 = *a lot*.

Key Global Warming Beliefs

Happening belief certainty regarding the reality of global warming was assessed with a 9-point scale ranging from 1 = *complete certainty that global warming is not happening* to 5 = *don't know* to 9 = *complete certainty that it is happening.*

Understanding of human causation was assessed as a dichotomy: 1 = Humans are primarily responsible for climate change and 0 = all other responses, including global warming is not occurring, it is occurring but is attributable to natural causes, both humans and natural change are causing climate change, and "don't know."

Risk perceptions were assessed using the mean of eight items asking how much each of the following will be harmed by climate change: the respondent, the respondent's family, the respondent's community, people in the United States, people in developing nations, future generations, and plant and animal species. The 4-point scales ranged from 1 = *not at all* to 4 = *a great deal* (Cronbach's α = .98).

Collective response efficacy, the belief that humans are capable of reducing climate change, was assessed with a 5-point scale: 5 = *Humans can reduce global warming and are going to do so successfully*; 4 = *Humans could reduce global warming, but it's unclear whether we will do what's needed*; 3 = *Humans could reduce global warming, but people aren't willing to change their behavior, so we're not going to*; 2 = *People can't reduce global warming, even if it is happening*; and 1 = *Global warming isn't happening*.

Individual response efficacy was assessed with three measures, each measured on a 4-point scale from 1 = *not at all* to 4 = *a lot*: Respondents estimated how much their current and intended actions reduce their own contribution to global warming, how much these actions would reduce global warming if most people in the United States performed them, and how much it would reduce global warming if most people in the industrialized nations performed them.

The reliability of all five key global warming beliefs when treated as indicators of a single underlying construct was Cronbach's α = .85.

Treatment of the Data

To reduce the effects of any nonresponse and noncoverage bias in the sample, we applied a poststratification adjustment, using demographic distributions from the most recent Current Population Survey. This process weights the data to yield nationally representative results,[6] and has been used in analyses presenting descriptive statistics. It has not been used in the structural equation model because the program (AMOS 19.0) cannot work with weighted data. All missing data were imputed using hot deck

[6] Poststratification variables were gender, age, race/Hispanic ethnicity, education, census region, metropolitan area, and Internet access.

imputation, as described in Myers (2011), based on respondents' gender, education, geographic region, and political party.

To assess the unidimensionality of the latent construct indicators, we tested a measurement model in which all the latent variables were allowed to correlate. In our prior study of political activism (Roser-Renouf et al., 2014), the key beliefs were treated as individual indicators; they were highly correlated, however, and all related to the dependent variables in a similar manner. Hence, in this study, we tested whether they could be treated as indicators of a single, underlying construct, thereby creating a more parsimonious model. Results indicated that this was acceptable.

The initial analysis identified a number of correlated error terms: the three individual response efficacy perceptions among the key beliefs, the injunctive beliefs that citizens and corporations should do more, the goals of educating others and acting as a role model, purchase of local and organic produce, and rewarding and punishing companies. With these correlations added to the model, the measurement model provided a good fit to the data: χ^2 = 1584.99 (*df* = 532), χ^2/df = 2.98, root mean square error of approximation (RMSEA) = .044, comparative fit index (CFI) = .960, standardized root mean residual (SRMR) = .054.

The hypothesized model was then tested, with the addition of demographic controls for age, gender, education, and income as predictors of consumption goals and behaviors. In the reported results, nonsignificant controls have been dropped for simplicity.

Results

Predictors of Consumption Goals

Respondents tended to be somewhat sure that global warming is happening (*M* = 6.38, *SD* = 2.18), but fewer than half understood that humans are the primary cause (48%). Risk perceptions were slightly above the scale midpoint (*M* = 2.71, *SD* = 0.96). Collective efficacy, in terms of confidence that humans can and will reduce global warming, averaged 3.15 (*SD* = 1.07), above the scale midpoint, but not indicative of a strong sense of efficacy (i.e., 3 = *Humans could reduce global warming, but people aren't willing to change their behavior so we won't*).

Responses to the individual response efficacy beliefs revealed that people did not have much confidence that their actions were reducing their own contribution to global warming (*M* = 2.06, *SD* = 0.89), but somewhat greater confidence that these actions could reduce global warming if performed by most in the United States (*M* = 2.56, *SD* = 1.02) or most in the industrialized nations (*M* = 2.84, *SD* = 1.08). This pattern likely reflects respondents' sense that individual actions make little difference, whereas collective actions are more effective.

The two measures of affective issue involvement both averaged slightly below the scale midpoints (worry *M* = 2.46, *SD* = 0.95; personal importance *M* = 2.69, *SD* = 1.15).

Consumer activism response efficacy was low, with 42% responding that their actions would influence corporations not at all, and another 32% responding that they would influence only a little (M = 1.93, SD = 0.91). However, injunctive beliefs that more action should be taken to address global warming averaged above the scale midpoint (M = 3.64, SD = 1.06); individual measures: corporations and industry (M = 3.96, SD = 1.12), citizens themselves (M = 3.73, SD = 1.04), the U.S. Congress (M = 3.54, SD = 1.27), and President Obama (M = 3.36, SD = 1.25).

Consumption Goals

Fewer respondents said that social impact goals were important in their purchasing decisions, as compared with personal green purchasing goals (see Table 2). Overall, the mean social impact goal was lower (M = 2.40, SD = 1.16) than the personal green purchasing mean (M = 2.66, SD = 1.31), averaged over the six items that share the same 5-point response scale as the social impact measures, t = 9.83, p < .001. Distributions varied significantly, with greater variance in personal green purchasing goals (Levene statistic = 3.41, p <.001).

Table 2. Social Impact and Personal Purchasing Goals.

Question	Mean	*SD*
When you decide whether or not to buy something, how often do you consider the effects of your purchases on the environment?	2.69	1.19
When you decide whether or not to purchase a product or service, how important are each of the following to you? The product or service . . .		
Social impact goals		
• Promotes positive social change	2.49	1.34
• Tells corporate America people will pay more for products that reflect our values	2.44	1.33
• Helps me educate others about responsible purchases	2.39	1.33
• Allows me to serve as a role model for other people	2.29	1.28
Personal green consumption goals		
• Is recyclable	2.81	1.49
• Does not cause damage to the environment	2.76	1.47
• Promotes the well-being of the next generation	2.69	1.47
• Helps me to live simply	2.68	1.45
• Uses few resources	2.55	1.41
• Does not contribute to global warming	2.47	1.41

Fewer than 10% of the respondents said that any of the social impact goals were essential to their purchase decisions, and at least 11% rated every personal green purchasing goal as such. Nonetheless, many consumers did express strong social impact goals, with close to a quarter of the respondents saying that each of the social impact goals was either very important or essential to their purchase decisions, and close to half saying that these goals were at least somewhat important.

A quarter of respondents said that they think they consider the environmental impacts of their purchases often or very consistently, with recyclability being the most commonly considered factor in purchase decisions. Although contribution to global warming was the least considered factor in purchasing decisions, it was, nonetheless, considered at least very often by just over a quarter of the respondents.

Green Purchasing Opinion Leadership

Over the four measures of opinion leadership, respondents averaged 1.78 (*SD* = 0.76) on the 4-point scales, slightly below *rarely*. Talking to family and friends about the environmental impacts of products and foods was the most common form of opinion leadership, and spreading information about company practices was the least (see Table 3). Over a third of the respondents talked to others at least occasionally, and close to a third had looked for information about the environmental impacts of products or foods. Over a quarter had discussed irresponsible corporate behavior.

Table 3. Green Purchasing Opinion Leadership.

Over the past 12 months, how often, if ever, have you done the following?	Mean	*SD*
Talked to family and friends about the environmental impact of different products and/or foods	2.06	1.03
Looked for information about the environmental impact of different products and/or foods	1.92	1.03
Discussed a company's irresponsible environmental behavior with family and/or friends	1.81	0.99
Spread information about a company's irresponsible environmental behavior through the Internet or the media	1.31	0.71

Green Purchasing

Respondents reported relatively high purchasing of green products and services (see Table 4). A third said that they had rewarded a company for acting to mitigate global warming at least once, and a quarter said that they had boycotted a company that opposes mitigation. Over half had bought local foods at least occasionally, and a third had done so often. Even environmentally friendly investments were not uncommon, with 19% saying that they had done so at least once.

Table 4. Green Purchasing.

Question	Mean	*SD*
Over the past 12 months, how many times have you done these things?		
Rewarded companies that are taking steps to reduce global warming by buying their products	1.91	1.34
Punished companies that are opposing steps to reduce global warming by NOT buying their products	1.65	1.18
Over the past 12 months, how often, if ever, have you done the following?		
Bought food grown or produced locally	2.94	0.99
Bought organic food	2.26	1.08
Chosen not to buy meat for environmental reasons	1.58	0.93
Invested in stocks or mutual funds that are environmentally friendly	1.34	0.77
	Yes	No
Have you ever deliberately bought services from environmentally friendly businesses that are explicitly ecofriendly (such as dry cleaning, insurance, landscaping, home repair, or other services)?	26%	74%

Structural Equation Modeling

The hypothesized model provided a good fit to the data: χ^2 = 2487.66 (*df* = 712), χ^2/df = 3.49, RMSEA = .049, CFI = .934, SRMR = .063. Results for the structural model are shown in Table 5; the model is shown in Figure 1.[7]

H1 was supported: Key global warming beliefs—that climate change is real, human-caused, harmful, and solvable, and that one's own actions can help reduce it—were strongly predictive of both issue involvement (R^2 = 82%) and the injunctive beliefs that citizens, corporations, and politicians should do more to address global warming (R^2 = 66%).

H2 was also supported: Issue involvement, injunctive beliefs, and consumer activism response efficacy explained 38% of the variance in both social impact goals and personal green purchasing goals,

[7] The measurement model results and a correlation matrix for all the variables in the analysis are available at the first author's page in Research Gate: https://www.researchgate.net/profile/Connie_Roser-Renouf.

supporting both H2a and H2b. Older people and women were more likely to hold both types of goal, and people with less education and lower incomes were more likely to hold social impact goals.

H3, which predicted that affective issue involvement, injunctive beliefs, and the perceived efficacy of consumer activism would be significantly stronger predictors of social impact goals than of green purchasing goals, was not supported. The three predictors explained equal amounts of variance in social impact and personal purchasing goals (R^2 = 38%). Injunctive beliefs and efficacy did not differ significantly in their ability to predict the two types of goal, and affective issue involvement was a stronger predictor of green purchasing goals than of social impact goals (critical ratio = 2.97, $p < .05$), a significant difference in the opposite direction as hypothesized.

H4 was supported: Green purchases and opinion leadership were predicted by both consumption goals, explaining 32% of the variance in opinion leadership and 44% of the variance in green purchases. Men were more likely to engage in opinion leadership, and people with more education and income purchased more green products and services. The two goals were highly correlated (r = .78), as were the two types of behavior (r = .94). The latter were, in fact, so highly correlated that they could have been collapsed into a single latent variable. We tested a model with opinion leadership and green purchasing combined into a single latent variable, which yielded a comparable fit to the data as the hypothesized model: χ^2 = 2524.30 (df = 716), χ^2/df = 3.53, RMSEA = .049, CFI = .930, SRMR = .065. Nonetheless, we retained both constructs as they are conceptually distinct.

H5, which predicted that social impact goals would be significantly stronger predictors of opinion leadership than personal green purchasing goals were, was not supported. The results trended in the direction opposite our prediction, but were not significant (critical ratio = 1.54, *ns*). We also found that social impact goals were marginally stronger predictors of green purchasing than of opinion leadership (critical ratio = 1.84, $p < .10$).

Table 5. Structural Model of Climate Change Consumer Activism.

Dependent variable	Predictors	Standard regression coefficients	R^2 (%)
Key global warming beliefs	Gender	.089**	1.6
	Education	.090**	
	Income	−.062†	
Involvement	Key beliefs	.905***	81.9
Injunctive beliefs	Key beliefs	.813***	66.1
Social impact goals	Involvement	.446***	38.5
	Injunctive beliefs	.131**	
	Consumer activism response efficacy	.231***	
	Age	.102***	
	Gender (2 = female)	.085**	
	Education (1–4 scale)	−.048*	
	Income (1–19 scale)	−.047*	
Personal green purchasing goals	Involvement	.466***	37.8
	Injunctive beliefs	.112**	
	Consumer activism outcome expectancy	.210***	
	Age	.108***	
	Gender (2 = female)	.085***	
Green purchasing opinion leadership	Social impact goals	.151*	31.7
	Personal green purchasing goals	.432***	
	Gender (2 = female)	−.045*	
Green purchases	Social impact goals	.308***	42.7
	Personal green purchasing goals	.358***	
	Income (1–19 scale)	.083**	
	Education (1–4 scale)	.083**	

*†p < .10; *p < .05; **p < .01; ***p < .001*

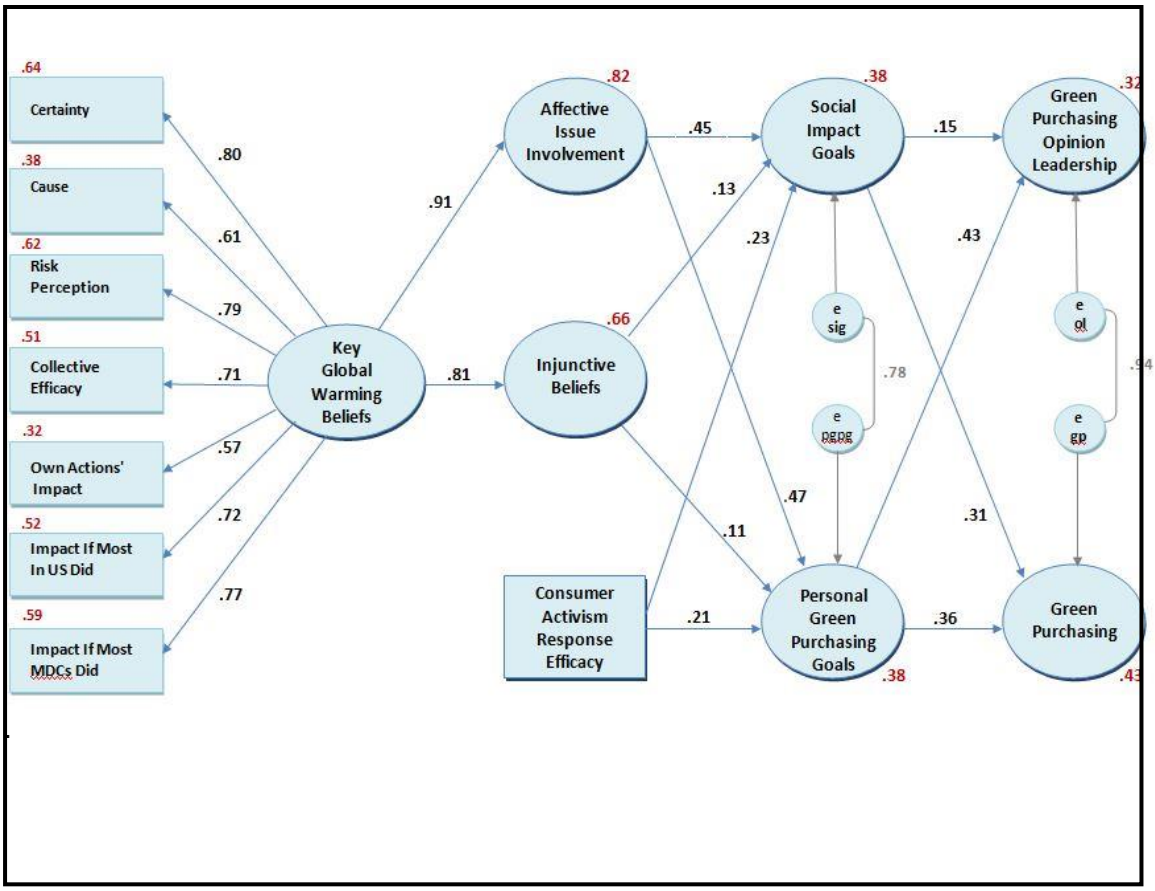

Figure 1. Structural model of climate change consumer activism.

Chi-square = 2487.66 (*df* = 712), p < *.001; chi-square/df = 3.49; root mean square error of approximation = .049; comparative fit index = .934; standardized root mean residual = .063. Standardized regression coefficients are shown in black; explained variance is shown in red; correlation coefficients are shown in gray. Demographic controls are not shown. "MDC" refers to "more developed countries."*

Discussion

These results contribute to a growing literature showing that people who are motivated to take action on climate change understand that it is real, human-caused, dangerous, and solvable. These key beliefs have been linked to perceived national seriousness, support for a political response, and political activism. The current study shows that they also underlie consumer activism, a response that may be particularly prevalent in the United States in light of the additional social and personal rewards people may obtain from making green purchases.

Our survey did not include questions about these social and personal rewards, and it is unlikely that respondents could have assessed their importance correctly had they been asked, given the largely unconscious nature of much social norm influence (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). We are only able to state the degree to which climate change beliefs underlie consumer choices, with all other influences encompassed within the unexplained variance in the model. What is clear is that global warming beliefs are motivating some portion of the green purchasing taking place in the United States.

As in prior research, beliefs about global warming are very strong predictors of issue involvement, defined here as worrying about the issue and perceiving it to be personally important. Involvement, in turn, is the strongest predictor of green purchasing and social impact goals. As might be expected, green purchasing goals are more prevalent than social impact goals: A large number of people intend to purchase products that are not damaging to the environment, and a smaller (but still substantial) number intend to promote social change by influencing corporate practices and the purchasing behavior of those around them. These results suggest that close to half of Americans view the social impact of their consumer choices as at least somewhat important, and about 10% consider them to be essential.

Surprisingly, however, social impact goals did not predict opinion leadership more strongly than personal green consumption goals did. The analysis suggests that consumption goals are enacted in ways that differ from our hypotheses, with green consumers engaging in a perhaps unintentional form of opinion leadership and social influence: Many people who are interested in sustainable consumption may share information with those around them without the explicit intention to persuade and promote change. Rather than a desire to influence others' consumer choices leading directly to interpersonal influence, a more informal social influence is suggested here, consistent with other studies finding that interpersonal communication, social relationships, and activism are deeply intertwined, particularly in the context of digital and online media. For example, politically motivated consumption, defined as consumption choices based on ethical or political decisions (Stolle & Micheletti, 2013), is positively associated with both interpersonal discussion and online political discussion networks such as Facebook (Gil de Zúñiga, Copeland, & Bimber, 2013). Similarly, people who use social media to connect with new LGBT friends or discuss LGBT issues are significantly more likely to engage in political consumption (Becker & Copeland, 2015).

To the extent that people were acting on social impact goals, they were somewhat more likely to do so through their purchase decisions rather than through opinion leadership. Many consumer activists operate under what Willis and Schor (2012) call a "naive aggregationist" understanding of consumer activism, believing that purchase decisions of many independent individuals acting alone create a "tsunami that can roll over anything in its path" (p. 165). This simple model fails, they note, because it does not take into account outside influences, obstacles, pressures, and social influence. They contrast this "naive" model with a more sophisticated model that takes social networks into account: Activism occurs through decentralized networks (Hollenbeck & Zinkhan, 2006; Olmerud, 1998), in which some individuals act as opinion leaders, educating, modeling, and persuading friends and family, whereas others are largely inactive recipients of information that shapes their choices.

The public may not recognize this, but environmental organizations promoting consumer action are likely to. Greenpeace International, for example, harnesses the power of social influencers in campaigns to pressure corporations to engage in more environmentally friendly business practices. It connects with sympathetic participants and mobilizes them to action, relying heavily on social media outlets such as Facebook and YouTube (Katz-Kimchi & Atkinson, 2015).

Finally, the fact that personal green purchasing goals were very strong predictors of both types of behavior suggests that the social and identity rewards of consumers may be essential cobenefits that facilitate widespread social changes in buying habits: Green consumption motivated by nonactivist benefits may nonetheless foster behaviors that evolve into activism over time.

Strategies for Increasing Consumer Activism

The results suggest several communication strategies to promote consumer activism. First, consumer activism response efficacy—the belief that one's actions will influence companies—is a strong predictor of both personal green purchasing and social impact goals, but one that is held by few people: Seventy-two percent of respondents said that their actions influenced companies not at all or only a little, and only 5% said that their actions influenced companies a lot. Increasing people's sense that companies will respond to their actions could increase the proportion of the public motivated to act. Successful examples of consumer activism could help strengthen this belief.

Second, the injunctive belief that citizens, corporations, and politicians should be doing more to reduce global warming was the weakest predictor of both forms of consumption goals. Logically, the belief that societal action should be taken to address global warming could be expected to provide motivation to act oneself, both in one's own purchasing decisions and also in encouraging others to act. The fact that these constructs are only weakly related suggests that campaigns may wish to highlight the inconsistency; that is, messages could argue that individuals should personally promote and enact the social changes they already support.

Finally, we modeled opinion leadership and sustainable consumption as two distinct behaviors. The results do not support this conceptualization: Although opinion leadership and personal consumption appear theoretically distinct, they are almost indistinguishable quantitatively. Thus, for most Americans, green consumption is not merely a personal, private-sphere behavior, but is instead associated with opinion leadership, just as it was within Willis and Schor's (2012) purposive sample of activists. The primary difference identified here between green purchasing and opinion leadership is that education and income predict the former but not the latter, from which we infer that consumer activism may be a unitary construct within the general public, encompassing both consumer choices and opinion leadership, but that some indicators of the construct—purchases—require greater resources, whereas leadership is open to people without advanced degrees or large incomes.

Limitations

As with all cross-sectional research, inferences regarding causal relationships should be treated with caution. Our model arranges constructs in a logical, sequential order, and is consistent with theory and prior research; nonetheless, it cannot account for feedback loops or for reverse causation, in which people purchase products without understanding their own motivations and then infer their goals from their own behavior. Attitude–behavior inconsistency, unreliability in measurement, socially desirable responding, and acquiescence also may have influenced the observed results.

Conclusion

We began this article with questions about motivators of collective action, specifically, motivators of climate change consumer activism. We recognized that threat and efficacy perceptions are insufficient explanations for the prevalence of green consumption as a collective response to climate change, and that secondary rewards may increase its frequency. Our study focused, however, on the effects of specific global warming beliefs and efficacy perceptions, as these may be more responsive to strategic communications. The results demonstrate that consumer activism on climate change is motivated by both personal and social impact goals, and that key beliefs about climate change are strongly predictive of these goals: People who recognize the threat, believe that human action can reduce it, and that their own actions make a difference are more motivated to act.

Communicators may wish to supplement this information with messages aimed at increasing public perceptions of the effectiveness of consumer activism in promoting change and encouraging people to move from the generalized perception that action should be taken to a position of personal responsibility for creating change. Finally, when considering what specific actions to recommend as effective responses to climate change, communicators should consider opinion leadership, which can magnify change far beyond the effects resulting from any single individual's purchase decisions.

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