

# How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework

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## Abstract

Highlighting the important role of marketing in encouraging sustainable consumption, the current research presents a review of the academic literature from marketing and behavioral science that examines the most effective ways to shift consumer behaviors to be more sustainable. In the process of the review, the authors develop a comprehensive framework for conceptualizing and encouraging sustainable consumer behavior change. The framework is represented by the acronym SHIFT, and it proposes that consumers are more inclined to engage in pro-environmental behaviors when the message or context leverages the following psychological factors: Social influence, Habit formation, Individual self, Feelings and cognition, and Tangibility. The authors also identify five broad challenges to encouraging sustainable behaviors and use these to develop novel theoretical propositions and directions for future research. Finally, the authors outline how practitioners aiming to encourage sustainable consumer behaviors can use this framework.

## Keywords

corporate social responsibility, ecological behavior, environmentally friendly behavior, sustainable consumer behavior

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“We are jeopardizing our future by not reining in our intense but geographically and demographically uneven material consumption . . . By failing to adequately limit population growth, reassess the role of an economy rooted in growth, reduce greenhouse gases, incentivize renewable energy, protect habitat, restore ecosystems, curb pollution, halt defaunation, and constrain invasive alien species, humanity is not taking the urgent steps needed to safeguard our imperilled biosphere. . . .

—World Scientists’ Warning to Humanity: A Second Notice (Ripple et al. 2017)

I always make the business case for sustainability. It’s so compelling. Our costs are down, not up. Our products are the best they have ever been. Our people are motivated by a shared higher purpose—esprit de corps to die for. And the goodwill in the marketplace—it’s just been astonishing.

—Ray Anderson (2009), Founder and CEO of Interface Carpet

Our behaviors as individual consumers are having unprecedented impacts on our natural environment (Stern 2000). Partly as a result of our consumption patterns, society and business are confronted with a confluence of factors—including environmental degradation, pollution, and climate change; increasing social inequity and poverty; and the growing need for renewable sources of energy—that point to a new way of doing business (Menon and Menon

1997). In response, many companies are recognizing the need for a sustainable way of doing business, and across industries we see firms such as Interface Carpet, Unilever, Nike, and Starbucks embedding sustainability into the DNA of their brands (Hardcastle 2013). The current research provides a review of the literature regarding sustainable consumer behavior change and outlines a comprehensive psychological framework to guide researchers and practitioners in fostering sustainable behavior.

## Marketing and Sustainable Consumer Behavior

There are many reasons why understanding facilitators of sustainable consumer behavior should be of interest to marketers. One reason is reflected in the Ripple et al. (2017) quote: marketers

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should be cognizant that the consumption mindset that conventional marketing encourages is a key driver of negative environmental impacts (Csikszentmihalyi 2000; Peattie and Peattie 2009). Second, as the Ray Anderson quote suggests, businesses able to adapt to the demands of our changing world, including the urgent demand for sustainability, will be more likely to thrive in the long term and enjoy strategic benefits (Banerjee, Iyer, and Kashyap 2003). A sustainable business focus has advantages such as identifying new products and markets, leveraging emerging technologies, spurring innovation, driving organizational efficiency, and motivating and retaining employees (Hopkins et al. 2009). Moreover, research suggests that socially and environmentally responsible practices have the potential to garner more positive consumer perceptions of the firm, as well as increases in profitability (Brown and Dacin 1997; Luo and Bhattacharya 2006; Olsen, Slotegraaf, and Chandukala 2014; Sen and Bhattacharya 2001).

Firms that are able not only to operate more sustainably but also to consider new models of business that offer and encourage sustainable consumption can potentially earn greater long-term profits (Kotler, Kartajaya, and Setiawan 2010). In one example, the growth of the “sharing economy” demonstrates the substantial environmental and economic gains possible through shifting consumers sustainably—in this case, from *owning* products to *accessing* existing products and services. Although the question of how marketing relates to sustainable consumption has historically received attention in the form of identifying the “green consumer” segment (Anderson and Cunningham 1972; Kilbourne and Beckmann 1998), scholars now call for work on the predictors of sustainable consumption (Kotler 2011; Menon and Menon 1997; Mick 2006). Rather than merely targeting the green consumer segment, marketers can expand their market for the long-term mutual benefit of the firm and the planet. Thus, as firms operate and offer products and services in a more sustainable manner, they might simultaneously wish for consumers to recognize, embrace, and reward their sustainable values and actions in ways that spur sustainable consumption and maximize the firm’s sustainability and strategic business benefits.

The current work is motivated by the need for a comprehensive review and framework related to the key drivers of sustainable consumer behavior change. We build on existing work that has aptly outlined the steps marketers can take to identify, foster, and evaluate sustainable behavior (McKenzie-Mohr 2011; Peattie and Peattie 2009). Although this existing work details the social marketing concept and spotlights examples, it does not provide a comprehensive psychological framework for influencing consumer behavior change. Extant work often concentrates on a more focused set of factors that motivate sustainable behavior (Gifford 2014; Peattie 2010; Steg and Vlek 2009).<sup>1</sup> The first intended contribution of the present

work, then, is to outline a comprehensive framework to help both practitioners and researchers encourage sustainable consumer behavior. On the practitioner side, access to a broader framework (including all the major factors from the literature) will allow practitioners to develop the most effective interventions. Second, the unique, process-driven focus of our framework (as opposed to the intervention focus of previous work) ensures that as technologies and societies change, practitioners can easily apply our framework to new situations. Thus, a key contribution is that we offer a comprehensive set of tools firms can use as they pursue their sustainability and strategic business goals. Third, undertaking a more complete review allowed us to delineate a broader set of challenges to sustainable consumer behavior change that can inform both practitioners and researchers. We discuss these challenges—the self–other trade-off, the long time horizon, the requirement of collective action, the problem of abstractness, and the need to replace automatic processes with controlled processes—in the theoretical contribution section. Finally, we use these challenges to sustainable consumer behavior change to introduce a set of novel theoretical propositions to guide further conceptual development and future research.

## Shifting Consumers to Behave Sustainably

At first glance, it might appear that the goals and assumptions of marketing are incompatible with the goals and assumptions of sustainability. Traditional marketing encourages growth, promotes an endless quest for satisfying needs and wants, and seems to view resources as ever abundant (Csikszentmihalyi 2000; Swim, Clayton, and Howard 2011). In contrast, a sustainability focus suggests that utilized resources can be renewed by mimicking the circular flows of resources in nature, and it respects the fact that capacity of both resources and the environment are limited (McDonough and Braungart 2002; Mont and Heiskanen 2015). We argue that, because of this apparent contradiction, marketing and sustainability are inextricably intertwined. Furthermore, we take the optimistic view that marketing and behavioral science have much to say about how we might influence consumption to be more sustainable. We review the literature and highlight ways in which consumers can be encouraged to behave more sustainably. Our review of the literature has led to the emergence of the acronym SHIFT, which reflects the importance of considering how Social influence, Habit formation, Individual self, Feelings and cognition, and Tangibility can be harnessed to encourage more sustainable consumer behaviors.

The SHIFT framework can help address the “attitude–behavior gap” that is commonly observed in sustainability contexts. Although consumers report favorable attitudes toward pro-environmental behaviors (Trudel and Cotte 2009), they often do not subsequently display sustainable actions (Auger and Devinney 2007; Gatersleben, Steg, and Vlek 2002; Kollmuss and Agyeman 2002; Young et al. 2010). This discrepancy between what consumers say and do is arguably the biggest challenge for marketers, companies, public policy makers, and

<sup>1</sup> Steg and Vlek (2009) focus on three key motivators of sustainable behavior change: weighing costs and benefits, moral and normative factors, and affective factors. Peattie (2010) provides a comprehensive review but does not give a detailed analysis of habit formation, emotional factors, or tangibility. Gifford (2014) gives a broad review of theories and techniques but does not delve as deeply into issues linked to habit, the self-concept, cognition, or tangibility.

nonprofit organizations aiming to promote sustainable consumption (Johnstone and Tan 2015; Prothero et al. 2011).

Thus, although consumer demand for sustainable options is certainly on the rise (Gershoff and Frels 2014)—for example, 66% of consumers (73% of millennials) worldwide report being willing to pay extra for sustainable offerings (Nielson 2015)—there is room to further encourage and support sustainable consumer behaviors. We define sustainable consumer behavior as actions that result in decreases in adverse environmental impacts as well as decreased utilization of natural resources across the lifecycle of the product, behavior, or service. Although we focus on environmental sustainability, we note that, consistent with a holistic approach to sustainability (Norman and MacDonald 2004), improving environmental sustainability can result in both social and economic advances (Chernev and Blair 2015; Savitz and Weber 2013). We examine the process of consumption including information search, decision making, product or behavior adoption, product usage, and disposal in ways that allow for more sustainable outcomes. Thus, sustainable consumer behaviors could include voluntarily reducing or simplifying one's consumption in the first place (Leonard-Barton 1981; McDonald et al. 2006); choosing products with sustainable sourcing, production, and features (Luchs, Brower, and Chitturi 2012; Pickett-Baker and Ozaki 2008); conserving energy, water, and products during use (Lin and Chang 2012; White, Simpson, and Argo 2014); and utilizing more sustainable modes of product disposal (White and Simpson 2013).

Unlike typical consumer decision making, which classically focuses on maximizing immediate benefits for the self, sustainable choices involve longer-term benefits to other people and the natural world. Although broader marketing strategies can be useful in this domain, marketers also need a unique set of tools to promote sustainability. We endeavor to outline the key drivers of sustainable consumption with one comprehensive framework. Our review of existing literature on sustainable consumption began with an initial selection of top marketing journals: *Journal of Marketing*, *Journal of Marketing Research*, *Journal of Consumer Psychology*, and *Journal of Consumer Research*. These behavioral marketing and consumer behavior journals are the most highly regarded in the field, having high impact factors (above 3.0), and they are all featured on the *Financial Times* Top 50 list. Using this set of journals, we conducted a literature search using specific keywords on Web of Science. The keywords included: sustainab\* or ecolog\* or green or environment\* or eco-friendly and consum\* or behavi\* or choice or usage or adopt\* or disposal.

This set of papers was then read and grouped into themes, which formed the five factors in the SHIFT framework. We used these five categories because they emerged in our initial review as being the most frequently occurring concepts, and because they allowed us to summarize the literature on sustainable behavior change in an inclusive manner. To extend our review, we then searched the literature more broadly by using our first set of search terms and replacing the third search word with more specific labels that were relevant to our five

themes. We refined our search to include behavioral sciences, business, psychology multidisciplinary, economics, and management journals. For example, for the first section on social influence, we searched “social influence” and “norms.” Our results allowed us to identify additional articles in peer-reviewed academic journals in marketing, psychology, and economics. We then read and reviewed these articles in terms of quality and relevance, which were determined through consensus among the authors before inclusion in our analysis. Our review identifies a set of 320 articles, some of which are used to frame the introduction ( $n = 40$ ) and the rest represent the SHIFT factors ( $n = 280$ ). Next, we discuss the five identified routes to sustainable consumer behavior change (refer to Web Appendix G for a summary of articles representing our SHIFT factors).

## The SHIFT Framework

### Social Influence

The first route to influencing sustainable consumer behaviors is social influence. Consumers are often impacted by the presence, behaviors, and expectations of others. Social factors are one of the most influential factors in terms of effecting sustainable consumer behavior change (Abrahamse and Steg 2013). We examine how three different facets of social influence—social norms, social identities, and social desirability—can shift consumers to be more sustainable.

**Social norms.** Social norms, or beliefs about what is socially appropriate and approved of in a given context, can have a powerful influence on sustainable consumer behaviors (Cialdini et al. 2006; Peattie 2010). Social norms predict behaviors such as avoiding littering (Cialdini, Reno, and Kallgren 1990), composting and recycling (Oskamp et al. 1991; White and Simpson 2013), conserving energy (Dwyer, Maki, and Rothman 2015; Goldstein, Cialdini, and Giskevicius 2008; Jachimowicz et al. 2018; Schultz et al. 2007), choosing sustainably sourced food (Dowd and Burke 2013), selecting eco-friendly transportation (Harland, Staats, and Wilke 1999), choosing green hotels (Teng, Wu, and Liu 2015), and opting for solar panels (Bollinger and Gillingham 2012). The Theory of Planned Behavior suggests that, along with subjective norms, attitudes and perceived behavioral control shape intentions, which predict behavior. This framework has been applied to sustainable behaviors (Han and Stoel 2017; Heath and Gifford 2002).

Cialdini and his colleagues use the term “descriptive norm” to refer to information about what other people are doing or commonly do (Cialdini, Reno, and Kallgren 1990; Reno, Cialdini, and Kallgren 1993). Descriptive norms can be stronger predictors of sustainable consumer behaviors than other factors such as self-interest, and people tend to underestimate how influential such norms can be (Nolan et al. 2008). Descriptive norms are most effective when combined with reference to similar contexts (Fornara et al. 2011). In one example, descriptive norms communicating that others were taking part in a

hotel energy conservation program were more effective than a traditional environmental message, especially when the descriptive norms referred to the same hotel room as the guest's (Goldstein, Cialdini, and Griskevicius 2008). Although descriptive norms are often very influential, if the majority of people are not engaging in the desired sustainable behavior, highlighting a descriptive norm might unintentionally lead to decreases in the desired action (Cialdini 2003; Schultz et al. 2007). One field study sheds light on an exception to this: when community organizers themselves installed (vs. did not install) solar panels on their homes (a behavior that reflects low norms), they were able to recruit 62.8% more residents to do the same (Kraft-Todd et al. 2018).

In contrast, "injunctive norms" convey what behaviors other people approve and disprove of. Such norms can thereby influence sustainable behaviors (Jachimowicz et al. 2018; Reno, Cialdini, and Kallgren 1993; Schultz et al. 2007), but they should be used carefully (Kronrod, Grinstein, and Wathieu 2012). Injunctive norms are most effective when combined with thoughts about the ingroup and when they do not threaten feelings of autonomy, which can lead to "reactance" responses (White and Simpson 2013). Thus, both descriptive and injunctive norms can affect sustainable behaviors, but they should be used with care.

**Social identities.** The impact of social influence depends on people's "social identities" or sense of identity stemming from group memberships (Tajfel and Turner 1986). For example, consumers are more likely to engage in sustainable actions if ingroup members are doing so (Goldstein, Cialdini, and Griskevicius 2008; Han and Stoel 2017; Welsch and Kühling 2009). Moreover, viewing the self as a member of a pro-environmental ingroup is a key determinant of pro-environmental choices and actions (Fielding et al. 2008; Gupta and Ogden 2009; Van der Werff, Steg, and Keizer 2013). Seeing the self as similar to a "typical recycler" predicts recycling intentions, over and above other factors such as attitudes, subjective norms, and perceived behavioral control (Mannetti, Pierro, and Livi 2004).

One additional implication of social identities is that individuals desire to view their ingroups positively (Rabinovich et al. 2012) and do not wish to see their ingroup outperformed by other groups (Ferguson, Branscombe, and Reynolds 2011). This is particularly true of outgroups that the consumer does not wish to be associated with, known as "dissociative groups." In one example, researchers examined intentions to undertake sustainable actions such as water conservation, composting organics, and recycling (White, Simpson, and Argo 2014). When people learned that a dissociative reference group had performed better on a positive, sustainable behavior (thus casting the ingroup in a negative light), the focal group members increased their own positive behaviors. These effects were augmented in public settings, because this is a condition under which the collective self is most relevant. One practical implication of this work is that friendly challenges could be encouraged between competing groups (Vugt, Griskevicius, and

Schultz 2014), such as cities, neighborhoods, organizations, or business units.

Another finding stemming from the social identity literature is that social identity effects are heightened for those high in "ingroup identification." Identifying with being "an organic consumer" or "a green consumer," for example, predicts organic purchases (Bartels and Hoogendam 2011; Bartels and Onwezen 2014). Moreover, majority group members, as well as minority group members who are high in ingroup attachment, receive messages encouraging sustainable consumption more positively (Grinstein and Nisan 2009). Highlighting a shared, superordinate ingroup identity can increase acceptance of information related to sustainable actions, especially for those who are high in ingroup identification (Schultz and Fielding 2014).

**Social desirability.** Another means by which social influence can impact sustainable behaviors is through "social desirability." Consumers tend to select sustainable options to make a positive impression on others (Green and Peloza 2014), and they endorse high-involvement sustainable options (e.g., hybrid vehicles) to convey social status to others (Griskevicius, Tybur, and Bergh 2010). However, observers sometimes view sustainable behaviors negatively, leading some consumers to avoid pro-environmental actions (Brough et al. 2016; Minson and Monin 2012; Olson et al. 2016; Sadalla and Krull 1995; Shang and Peloza 2016). In one instance, males avoided appearing "eco-friendly" because it was associated with feminine traits (Brough et al. 2016). One implication, then, is to make sustainable products or behaviors socially desirable and to buffer against potential negative perceptions linked to sustainable consumption.

Moreover, consumers are more likely to act in a socially desirable manner in public contexts in which other people can observe and evaluate their actions (Green and Peloza 2014; Grolleau, Ibanez, and Mzoughi 2009; Peloza, White, and Shang 2013). In addition, encouraging public commitments to engage in sustainable consumer behavior can increase such actions (Burn and Oskamp 1986; Gonzales, Aronson, and Costanzo 1988). For example, those who committed to participate in a hotel energy conservation program and wore a pin as a public symbol of this commitment were the most likely to engage in the program (Baca-Motes et al. 2012).

### Habit Formation

Whereas some sustainable behaviors (e.g., installing an efficient showerhead) require only a one-time action, many other sustainable behaviors (e.g., taking shorter showers) involve repeated actions that require new habit formation. Habits refer to behaviors that persist because they have become relatively automatic over time as a result of regularly encountered contextual cues (Kurz et al. 2014). Because many common habits are unsustainable, habit change is a critical component of sustainable behavior change (Verplanken 2011). Many behaviors with sustainability implications—such as food consumption, choice of transportation, energy and resource use, shopping,

and disposal of products—are strongly habitual (Donald, Cooper, and Conchie 2014; Verplanken and Roy 2016). Interventions that break repetition, such as discontinuity and penalties, can disrupt bad habits. Actions that encourage repetition, such as making sustainable actions easy and utilizing prompts, incentives, and feedback, can strengthen positive habits.

**Discontinuity to change bad habits.** The habit discontinuity hypothesis suggests that if the context in which habits arise changes in some way, it becomes difficult to carry out the usual habits that would occur. In other words, a disruption in the stable context in which automatic behaviors arise can create ideal conditions for habit change. Life changes (e.g., a recent move) make people more likely to alter their eco-friendly behaviors (Bamberg 2006; Verplanken et al. 2008; Walker, Thomas, and Verplanken 2015). Thus, combining context changes with habit formation techniques can be one way to encourage sustainable behaviors.

**Penalties.** Penalties are essentially types of punishment that decrease the tendency to engage in an undesirable behavior. A penalty might take the form of a tax, a fine, or a tariff on an unsustainable behavior. Fines can encourage behavior change in domains that can be monitored, such as the disposal of waste (Fullerton and Kinnaman 1995), whereas taxes and tariffs can be effective in domains that involve strong habits (e.g., driving gasoline-powered vehicles; Krause 2009). Although penalties can certainly deter unsustainable behaviors in some instances, they can trigger backfire effects if the penalty seems unreasonable (Fullerton and Kinnaman 1995) and can lead to negative affect and defensive responses (Bolderdijk, Lehman, and Geller 2012; Geller, Bechtel, and Churchman 2002; Steg and Vlek 2009). Moreover, penalties can be difficult to enforce and monitor (Bolderdijk, Lehman, and Geller 2012). Thus, it is often desirable to turn to positive behavior change strategies instead, which we discuss next.

**Implementation intentions.** One means of transitioning people from an old habit to a new one is to have them consider implementation intentions, or thoughts about what steps they will take to engage in the action (Kurz et al. 2014). Such intentions can positively influence recycling (Holland, Aarts, and Langendam 2006) and sustainable food-purchasing habits (Fennis et al. 2011). Then the new behavior can be encouraged through repetition and by positive habit formation techniques such as making it easy, prompts, feedback, and incentives.

**Making it easy.** Many sustainable actions are viewed as effortful, time-consuming, or difficult to carry out, which can be a barrier to sustainable actions (McKenzie-Mohr 2000). Thus, one strategy to encourage sustainable habit formation is to make the action easier to do (Van Houten, Nau, and Merrigan 1981). Contextual changes that improve the ease of engaging in sustainable behaviors, such as placing recycling bins nearby, requiring less complex sorting of recyclables, and offering showerheads with “low-flow” settings, encourage such behaviors (Brothers, Krantz, and McClannahan 1994; Gamba and

Oskamp 1994; Ludwig, Gray, and Rowell 1998). One means of making sustainable actions easier is to make them the default (Frederiks, Stenner, and Hobman 2015; Theotokis and Manganiari 2015). In one example, when sustainable electricity was set as the default option, individuals were more likely to stick with it (Pichert and Katsikopoulos 2008). Because consumers are often low on cognitive resources, simplifying the decision-making process can allow them to more automatically form sustainable habits (Steg and Vlek 2009).

**Prompts.** Another means of encouraging sustainable habit formation is the use of prompts: messages that are given before the behavior occurs to remind the consumer what the desired sustainable behavior is (Lehman and Geller 2004). Prompts can positively affect many sustainable behaviors including waste disposal, energy usage, and recycling (Osbaldeston and Schott 2012). Prompts to engage in sustainable behaviors work best when they are large, clear, easy to follow, and placed in proximity to where the behavior will be performed (Austin et al. 1993; Werner, Rhodes, and Partain 1998). Because prompts are easy to employ and cost-effective, they can be a good initial behavior change strategy (Schultz, Oskamp, and Mainieri 1995), but they are best utilized in combination with other strategies (Delmas, Fischlein, and Asensio 2013).

**Incentives.** Rewards, discounts, gifts, and other extrinsic incentives can increase desired behaviors and positive habit formation. Monetary incentives such as rebates, tiered pricing, and cash can encourage people to adopt and maintain sustainable behaviors (Diamond and Loewy 1991; Slavin, Wodarski, and Blackburn 1981; Wilhite and Ling 1995). Incentives have been shown to influence sustainable behaviors such as waste disposal and cleanup (Baltes and Hayward 1976), energy usage (Abrahamse et al. 2005), and transportation choices (Everett, Hayward, and Meyers 1974). Although incentives can encourage the adoption and maintenance of sustainable behaviors, they do have potential drawbacks (Bolderdijk and Steg 2015). Smaller monetary rewards are often less motivating than other types of incentives such as a free gift, a lottery entry, or social praise (Handgraaf, de Jude, and Appelt 2013; Hutton and McNeill 1981). Second, incentives to engage in sustainable behaviors can lead to actions that are short-lived (Katzev and Johnson 1984). Consumers initially respond positively to rewards, but the sustainable behavior often disappears once the incentive is removed (Cairns, Newson, and Davis 2010). Thus, one-time sustainable actions are easier to encourage with incentives than are longer-term changes (Geller, Bechtel, and Churchman 2002). Furthermore, incentives can have the unintended consequence of decreasing the desired behavior because the intrinsic motive to engage in the action is reduced (Bowles 2008).

**Feedback.** Another means of encouraging sustainable habit formation is to use feedback. This involves providing consumers with specific information about their own performance on a task or behavior. Feedback can be given for actions like water

and energy usage, and it can be provided with reference to the consumer's own past behaviors or in comparison to the performance of other individuals (Abrahamse et al. 2007; Fischer 2008; Tiefenbeck et al. 2016). Research suggests that feedback is more effective when it is presented over an extended period of time, in real-time, and in a clear manner (Chiang et al. 2014; Fischer 2008; Karjalainen 2011). Sharing group feedback with households and in work settings can also be an effective behavior change strategy (De Leon and Fuqua 1995; Schultz 1999; Schultz et al. 2007; Siero et al. 1996).

### *The Individual Self*

Factors linked to the individual self can have a powerful influence on consumption behaviors. The concepts discussed in this section include positivity of the self-concept, self-interest, self-consistency, self-efficacy, and individual differences.

**The self-concept.** Individuals desire to maintain positive self-views and can reaffirm the positivity of the self-concept through consumption (Dunning 2007). As a result of the desire to view the self positively, people often exhibit self-defensive reactions to learning that their own behaviors have negative environmental impacts (Dickinson 2009; Feygina, Jost, and Goldsmith 2010) and derogate others displaying more sustainable actions (Minson and Monin 2012; Zane, Irwin, and Reczek 2015). Moreover, people display motivated biases including the tendency to seek out and reinforce information that confirms preexisting views (Weber 2016). Furthermore, people avoid some forms of sustainable behavior change (e.g., travel behaviors) because changing can threaten the self (Murtagh et al. 2015). In one example, threats to Republican self-identity led to backfire effects such that Republicans decreased support for climate change mitigation policies in response to climate change communications (Hart and Nisbet 2012) or were less likely to choose an eco-friendly option (Gromet, Kunreuther, and Larrick 2013). Thus, positively associating sustainable behaviors with the self-concept and buffering against self-threatening information can be critical for sustainable behavior change. For example, self-affirmation, or the endorsement of important self-values, mitigates self-protective responses and leads to greater endorsement of sustainable actions (Brough et al. 2016; Prooijsen and Sparks 2014; Sparks et al. 2010).

The self-concept also relates to sustainable behaviors in that the possessions people own can become extensions of their identity (Belk 1988). One way this sense of extended self manifests is that people can be unwilling to part with possessions that are linked to the self because of a sense of identity loss (Winterich, Reczek, and Irwin 2017). Winterich and her colleagues showed that this identity loss was mitigated by having the consumer take a picture of a sentimental product before considering donating, which led to increased possession donation. Giving possessions to others not only has positive sustainability implications but it can also lead to greater well-being for the giver (Donnelly et al. 2017). Finally, consumers take better

care of and are less likely to trash (vs. recycle) identity-linked products (Trudel, Argo, and Meng 2016).

**Self-consistency.** In addition to wanting to see the self in a positive light, people want to see the self as being consistent. Self-consistency research shows that a consumer reaffirming a component of the self-concept (e.g., being environmentally concerned) or engaging in a sustainable behavior at one time point often leads to consistent sustainable behaviors in the future (Van der Werff, Steg, and Keizer 2014). Similarly, initial personal commitments to act sustainably can increase the likelihood of subsequently behaving in a sustainable manner (Bodur, Duval, and Grohmann 2015; Katzev and Johnson 1984), especially when they are made in writing (Lokhorst et al. 2013). Along with individual consistency, a firm adhering to green values can lead to increased consumer conservation behaviors (Wang, Krishna, and McFerran 2016). Furthermore, evidence suggests that people who engage in a sustainable action in one domain are often more likely to perform sustainably in other domains as well (i.e., positive spillover; Juhl, Fenger, and Thøgersen 2017; Lanzini and Thøgersen 2014; Lokhorst et al. 2013; Ölander and Thøgersen 2014; Truelove et al. 2014). Self-assessments of the consumer's behavior can also affect consistency. For example, those who felt that the end sustainability goal was unimportant were less motivated to pursue the end goal when they were unable to achieve subgoals (e.g., failing to recycle a newspaper; Devezet et al. 2014). Moreover, cuing people that a given behavior has positive sustainability outcomes leads them to see themselves as being more environmentally concerned and to be more likely to choose eco-friendly products (Cornelissen et al. 2008). Finally, simply reminding consumers of a time when their behavior was inconsistent with a personally held value related to sustainability can subsequently lead the consumer to behave in a manner consistent with those sustainable values (Dickerson et al. 1992; Pelozo, White, and Shang 2013).

Although there are many examples of self-consistency effects, inconsistency effects can also arise. Licensing effects may occur wherein individuals who have engaged in a sustainable action at one time point will later be *less* likely to engage in another sustainable or positive behavior (Phipps et al. 2013; Sachdeva, Jordan, and Mazar 2015; Tiefenbeck et al. 2013). For example, researchers found that people who took part in a "green" (vs. conventional) virtual shopping task that asked them to select from sustainable products were subsequently more likely to behave in an antisocial manner (Mazar and Zhong 2010). The availability of pro-environmental technologies and resources also can lead to negative spillover effects (Small and Dender 2007; Sorrell, Dimitropoulos, and Somerville 2009). For example, Catlin and Wang (2013) found that consumers used more resources when they knew that a recycling option was available.

Moreover, both inconsistency and consistency can emerge in the same context. People who brought a reusable shopping bag to the market subsequently spent more money on both sustainable and indulgent food options (Karmarkar and

Bollinger 2015). Furthermore, making a sustainable choice decreases subsequent sustainable behaviors for those low in environmental consciousness but increases these behaviors for those highly conscious of environmental issues (Garvey and Bolton 2017). Consistency rather than inconsistency effects may be more likely to occur when connected to transcendent rather than self-interested values (Evans et al. 2013).

**Self-interest.** Economic and evolutionary theories both suggest that appeals to self-interest can be leveraged to influence pro-environmental behaviors (Griskevicius, Cantú, and Vugt 2012; Paavola 2001). One strategy is to highlight the self-benefits associated with a given sustainable product, service, or behavior (Green and Peloza 2014; Nolan et al. 2008). Research shows that sustainable attributes have a greater influence on consumers if self-relevant motives are fulfilled (vs. not fulfilled; Schuitema and Groot 2015). Another means of appealing to consumer self-interest is to highlight self-benefits that can counteract the barriers to sustainable action (Gleim et al. 2013; Lanzini and Thøgersen 2014). Such barriers include the belief that sustainable attributes can have negative implications for aesthetics (Luchs and Kumar 2017), functional performance (Luchs et al. 2010; Newman, Gorlin, and Dhar 2014; Truelove et al. 2014), effort (Johnstone and Tan 2015), or affordability (Chang 2011; Gleim et al. 2013; Hughner et al. 2007). Messages that appeal to self-interest are most effective in private (Green and Peloza 2014) and when the individual self is primed in some way (White and Simpson 2013). Research suggests that a focus on self-interest is not always effective alone (McKenzie-Mohr 2000). Moreover, self-interests can crowd out pro-environmental motivations (Schwartz et al. 2015), especially when appeals include self-focused and environmentally focused reasons for acting sustainably (Edinger-Schons et al. 2018).

**Self-efficacy.** According to Bandura (1977), self-efficacy involves beliefs that the individual can engage in the required action and that carrying out the behavior will have the intended impact. Consumers' feelings of self-efficacy predict their sustainable attitudes as well as their tendencies to continue to enact sustainable behaviors over time (Armitage and Conner 2001; Cleveland, Kalamas, and Laroche 2005; Ellen, Wiener, and Cobb-Walgreen 1991; Kinnear, Taylor, and Ahmed 1974; White, MacDonnell, and Dahl 2011). According to Peattie (1999, 2001), consumers are most likely to choose sustainable options when consumer compromise is low and when there is high confidence that a particular behavior will make a difference (i.e., self-efficacy is high).

**Individual differences.** An important individual difference is "personal norms" or beliefs regarding a sense of personal obligation that are linked to one's self-standards (Bamberg, Hunecke, and Blöbaum 2007; Jansson, Marell, and Nordlund 2010; Schwartz 1977; Stern and Dietz 1994). Individual differences in personal norms around sustainability predict sustainable behaviors, including recycling (Guagnano, Stern, and Dietz

1995), selecting sustainable food (Wiidegren 1998), and being willing to pay more for sustainable options (Guagnano, Dietz, and Stern 1994; Stern, Dietz, and Kalof 1993). Other research has focused on differences in environmental concern (Alwitt and Pitts 1996; Paul, Modi, and Patel 2016; Schwepker Jr., Charles, and Cornwell 1991). Marketers can find success targeting those with strong personal norms and values around sustainability or by strengthening existing personal norms through priming (Peloza, White, and Shang 2013; Steg 2015; Steg et al. 2014; Verplanken and Holland 2002). In addition, individual differences in mindfulness (Bahl et al. 2016; Barber and Deale 2014; Panno et al. 2018; Sheth, Sethia, and Srinivas 2011) as well as perceptions of feeling connected to nature (Nisbet, Zelenski, and Murphy 2009) have been shown to predict environmental concern and sustainable behaviors. Furthermore, traits such as extraversion, agreeableness, conscientiousness, and environmental concern predict green buying behaviors (Fraj and Martinez 2006; Mainieri et al. 1997).

Finally, demographics have been shown to relate to sustainable consumption behaviors (Diamantopoulos et al. 2003; Gifford and Nilsson 2014; Murphy, Kangun, and Locander 1978). Gender differences in which women exhibit more sustainable consumer behaviors are sometimes noted. This may occur partly because women tend to be higher in traits such as agreeableness, interdependence, and openness to experience (Dietz, Kalof, and Stern 2002; Eagly 2009; Luchs and Mooradian 2012). Other work finds that those who are younger, more liberal, and highly educated are likely to engage in pro-environmental behaviors (Gilg, Barr, and Ford 2005; Granzin and Olsen 1991; Roberts 1993; Semenza et al. 2008). It makes sense to target responsive segments with sustainability appeals (Anderson and Cunningham 1972; Kinnear, Taylor, and Ahmed 1974; Laroche, Bergeron, and Barbaro-Forleo 2001), and interventions should be tailored to reflect the specific needs and motivations, barriers, and benefits of the target consumer (Abrahamse et al. 2007; Balderjahn et al. 2018; Daamen et al. 2001).

### Feelings and Cognition

We introduce the concepts of feelings and cognition together because, generally speaking, consumers take one of two different routes to action: one that is driven by affect or one that is more driven by cognition (Shiv and Fedorikhin 1999). This proposition is consistent with theories suggesting that either an intuitive, affective route or a more deliberative, cognitive route can dominate in decision making (Epstein 2003; Kahneman 2003, 2011). We note that this distinction is likely to be highly relevant in the domain of reacting to information about ecological issues (Marx et al. 2007). We first outline how negative and positive emotions can impact pro-environmental behaviors. Then we discuss the role of cognition in determining sustainable actions by considering information and learning, eco-labeling, and framing.



**Negative emotions.** Consumers often consider the negative emotional consequences of either engaging or not engaging in sustainable behaviors (Rees, Klug, and Bamberg 2015). Generally speaking, it is important to avoid creating negative emotional states that are too intense (Kollmuss and Agyeman 2002). Instead, more subtle activation of negative emotions can be effective (Meng and Trudel 2017; Peloza, White, and Shang 2013). We next address the impact of three specific negative emotions: fear, guilt, and sadness.

Communications regarding sustainable behavior often use “fear appeals” that highlight the negative consequences of a given action or inaction (Banerjee, Gulas, and Iyer 1995). On the one hand, communications that leave the individual feeling as though the consequences are uncertain and temporally distant can make the situation seem less dangerous and can lead to inaction (Lowe et al. 2006). On the other hand, using strong fear appeals can lead to a sense of being unable to overcome the threat and can result in denial (O’Neill and Nicholson-Cole 2009). Because of this, it is best to use moderate fear appeals and to combine these with information about efficacy and what actions to take (Li 2014; Osbaldiston and Sheldon 2002).

Guilt can influence sustainable intentions and behaviors (Carrus, Passafaro, and Bonnes 2008; Jiménez and Yang 2008; Luchs and Mooradian 2012; Mallett, Melchiori, and Strickroth 2013; Muralidharan and Sheehan 2018; Onwezen, Antonides, and Bartels 2013). This is largely due to the consumer assuming individual responsibility for the unsustainable outcomes (Lerner and Keltner 2000), leading people to feel morally responsible for the environment (Kaiser and Shimoda 1999). Research shows that “anticipated guilt” can also influence people to act in a pro-environmental manner (Grob 1995; Kaiser 2006; Mallett 2012; Steenhaut and Kenhove 2006). Anticipated guilt is more effective at encouraging sustainable behavior when consumers are subtly asked to consider their own self-standards of behavior rather than when they are exposed to explicit guilt appeals, which can backfire (Peloza, White, and Shang 2013). “Collective guilt” can also be a motivator of pro-environmental action (Ferguson, Branscombe, and Reynolds 2011). Information conveying that one’s country has a significant carbon footprint leads to a sense of collective guilt, and such feelings predict willingness to support sustainable causes and actions (Ferguson, Branscombe, and Reynolds 2011; Mallett, Melchiori, and Strickroth 2013).

In addition to fear and guilt, researchers have examined sadness as a driver of sustainable attitudes and behaviors (Sevillano, Aragonés, and Schultz 2007). Sadness was shown to lead to more pro-environmental behaviors such as using an energy footprint calculator and allocating higher donation amounts to a sustainable cause (Schwartz and Loewenstein 2017). However, once the emotion dissipated, differences in sustainable actions were eliminated between those who had received the sadness message versus a non-affective message. Thus, emotions such as sadness are more influential while consumers are experiencing them.

**Positive emotions.** Consumers are more inclined to engage in pro-environmental actions when they derive some hedonic pleasure or positive affect from the behavior (Corral-Verdugo et al. 2009). Sustainable behaviors can both decrease negative and increase positive emotions (Onwezen, Antonides, and Bartels 2013; Rezvani, Jansson, and Bengtsson 2017; Sun and Trudel 2017). On the one hand, engaging in sustainable actions has been shown to result in “warm glow” feelings that can spill over and lead to more favorable evaluations of the overall service experience (Giebelhausen et al. 2016). Positive emotions such as joy and pride have been shown to influence consumer intentions to decrease plastic water bottle usage, and optimism can motivate the maintenance of sustainable behaviors over time (Peter and Honea 2012). On the other hand, research suggests that positive emotions can work to *negatively* impact sustainable consumer behaviors. For example, unsustainable actions such as driving gas-powered automobiles are linked to positive affective benefits (Steg 2005).

Meanwhile, feelings of “affinity towards nature” predict sustainable attitudes and intentions (Kals, Schumacher, and Montada 1999). Studies demonstrated positive sustainable actions in response to “cute” appeals (e.g., communications featuring cute animals), particularly when the consumer exhibits “approach” motivational tendencies (Wang, Mukhopadhyay, and Patrick 2017). This is driven by increased feelings of tenderness in response to such appeals.

The role of specific positive emotions such as pride in determining sustainable consumer behaviors is also relevant (Bissing-Olson, Fielding, and Iyer 2016). Pride is a self-conscious and moral emotion stemming from a sense of responsibility for a positive outcome (Lerner and Keltner 2000). Those who feel a sense of pride have been shown to be more likely to subsequently engage in sustainable behaviors, in part because pride enhances feelings of effectiveness (Antonetti and Maklan 2014). Finally, positive environmental actions can lead to feelings of hope, which can increase climate activism and sustainable behaviors (Feldman and Hart 2018; Smith and Leiserowitz 2014). Feelings of hope can be augmented by framing climate change as a health issue as opposed to an environmental issue (Myers et al. 2012).

**Information, learning, and knowledge.** One basic means of persuading consumers to engage in eco-friendly actions is to present information that conveys information regarding desired (and undesired) behaviors and their consequences (McKenzie-Mohr 2000). Some have lamented that people’s dearth of understanding and knowledge—due to lack of exposure to information (Gifford 2011), information overload (Horne 2009; Neumann, Roberts, and Cauvin 2012), and confusion (Chen and Chang 2013)—can contribute to low uptake of sustainable behaviors. Moreover, intelligence (Aspara, Luo, and Dhar 2017), education (Gifford and Nilsson 2014), and knowledge (Levine and Strube 2012) are linked to greater responsiveness to environmental appeals and engagement in eco-friendly behaviors. In many ways, knowledge is relevant across all our SHIFT factors. The consumer must have



knowledge of the social norm, must be aware of and understand the prompt or feedback, and must comprehend information related to self-values, self-benefits, self-efficacy, etc.

Providing information through appeals that highlight why the desired behavior or product is sustainable can be effective in giving consumers the initial knowledge they need regarding actions and consequences (Peattie and Peattie 2009; Sussman and O'Brien 2016). Indeed, one is unlikely to engage in more deliberate forms of sustainable behavior change if one is not informed about the problem, potential positive actions, and possible consequences (Gifford and Nilsson 2014). Meta-analytic reviews suggest that information has a significant albeit modest influence on pro-environmental actions (Delmas, Fischlein, and Asensio 2013; Osbaldiston and Schott 2012). However, research also reveals that interventions providing information only are often not enough to spur long-term sustainable changes (Abrahamse et al. 2005; Osbaldiston and Schott 2012). Because of this, combining information with other tactics can be more effective (Kahan et al. 2012; McKenzie-Mohr 2011; Peattie and Peattie 2009; Stern 1999). Some work even suggests that detailed knowledge can backfire. Those with the highest levels of science literacy displayed more ideology-reinforcing bias than their counterparts, which was attributed to their science knowledge making them better able to support their own pre-existing viewpoints (Kahan et al. 2012).

**Eco-labeling.** Eco-labeling is one means of conveying information about the sustainable attributes of a product (Parguel, Benoît-Moreau, and Larceneux 2011). Labels that are attention-grabbing, easily understandable, and consistent across categories can enable consumers to make better informed eco-friendly decisions (Borin, Cerf, and Krishnan 2011; Taufique, Vocino, and Polonsky 2017; Thøgersen 2000). It has been suggested that eco-labels would be more effective if they were contrasted against negative labels that highlight products with environmentally harmful attributes (Borin, Cerf, and Krishnan 2011). Eco-labeling can seem more transparent and unbiased if it is certified by a third party that validates the sustainability claims (Manget, Roche, and Münich 2009). However, it is important to note that some work suggests eco-labels do not play a strong role in predicting consumer food selections (Grunert, Hieke, and Wills 2014).

**Framing.** Marketers can strategically choose message framing to encourage sustainable choices (Ungemach et al. 2018). Because consumers care more about future losses than about future gains (Hardisty and Weber 2009), labels on energy-efficient appliances should compare energy costs rather than savings (Bull 2012; Min et al. 2014). Furthermore, marketers can aggregate information to make a bigger impact, using lifetime (vs. annual) energy costs for appliances (Kallbekken, Sælen, and Hermansen 2013) and cost per 100,000 miles labeling to promote sales of efficient cars (Camilleri and Larrick 2014). Loss-framed information is especially effective when combined with concrete information on how to engage in the

behavior. For example, loss-framed messages were most effective in improving the quantity and accuracy of residential recycling behaviors when they were combined with detailed information about *how* to recycle (vs. more general reasons regarding *why* we should recycle) (White, MacDonnell, and Dahl 2011). Also, framing can have differential effects on different segments of consumers. In the United States, framing a carbon price as a carbon offset (vs. a tax) has a strong effect on Republicans but has little impact on Democrats and a moderate impact on Independents (Hardisty, Johnson, and Weber 2010). In another example, framing an appeal in terms of “binding moral values” (e.g., duty, authority, consistency with ingroup norms) leads to more positive recycling intentions and behaviors among Republicans, whereas appealing to “individualizing moral values” (e.g., fairness, empathy, individuality) leads to more positive reactions among Democrats (Kidwell, Farmer, and Hardesty 2013). Notably, such matching effects in message framing are often driven by perceptions of fluency or the ease of processing and comprehending the meaning of stimuli (Kidwell, Farmer, and Hardesty 2013; White, MacDonnell, and Dahl 2011).

### *Tangibility*

One unique facet of sustainable consumption is that eco-friendly actions and outcomes can seem abstract, vague, and distant from the self (Reczek, Trudel, and White 2018). Most sustainable consumer behaviors involve putting aside more immediate and proximal individual interests to prioritize behaviors with ill-defined consequences that are focused on others and are only realized in the future (Amel et al. 2017; Spence, Poortinga, and Pidgeon 2012). Moreover, consumers are not likely to act on issues that are impalpable in nature (Griskevicius, Cantú, and Vugt 2012). Pro-environmental outcomes are difficult to track and measure because changes emerge slowly over time and uncertainty surrounds problems and their solutions (Carrete et al. 2012; Gifford 2011; Weber 2010). Uncertainty can also emerge due to firm actions such as greenwashing (Chen and Chang 2013). Next, we outline some solutions to the tangibility problem.

**Matching temporal focus.** Whereas sustainability is naturally future-focused, consumers are often present-focused. Moreover, when consumers judge a future environmental payoff to be distant, it becomes less desirable in the present (Hardisty and Weber 2009; Vugt, Griskevicius, and Schultz 2014). One solution to this mismatch is to encourage the consumer to think more abstractly and/or to focus on future benefits of the sustainable action (Reczek, Trudel, and White 2018). Those who have a greater focus on the future engage in more pro-environmental behaviors (Arnocky, Milfont, and Nicol 2014; Joireman, Van Lange, and Van Vugt 2004). Asking individuals to focus on future generations can reduce present-focused biases (Wade-Benzoni, Tenbrunsel, and Bazerman 1997), and prompting the consideration of legacy increases sustainable choices (Zaval, Markowitz, and Weber 2015).

**Communicate local and proximal impacts.** Communications that relate the more immediate consequences of pro-environmental behaviors for a given city, region, or neighborhood can make environmental actions and outcomes seem more tangible and relevant (Leiserowitz 2006; Scannell and Gifford 2013). Drawing on people's attachments to a specific place (Devine-Wright and Howes 2010; Gifford 2014), emphasizing personal experiences with climate change impacts (Weber 2010), and using current issues such as extreme weather events can lead to more sustainability-oriented beliefs and actions (Li, Johnson, and Zaval 2011).

**Concrete communications.** Another way to tackle intangibility is to make sustainability issues more relevant and concrete for the self (Akerlof et al. 2013; Arnocky et al. 2014; Li, Johnson, and Zaval 2011; Reczek, Trudel, and White 2018; Spence, Poor-tunga, and Pidgeon 2012). This can be done by communicating the immediate impacts of environmental problems such as climate change (Paswan, Guzmán, and Lewin 2017) and outlining clear steps to make a difference (White, MacDonnell, and Dahl 2011). Communications can make the consequences of inaction (or action) clear by using techniques such as vivid imagery, analogies, and narratives (Marx et al. 2007).

**Encourage the desire for intangibles.** A challenge for sustainable behaviors is that consumers often have a desire to own material goods. One means of moving toward more sustainable consumption is to promote dematerialization (Csikszentmihalyi 2000) in which consumers decrease emphasis on the possession of tangible goods. This could include consumption of experiences (Van Boven 2005), digital products (Atasoy and Morewedge 2018; Belk 2013), or services (Lovelock 1983). This is consistent with the notion that marketing is evolving to be more focused on the provision of services, intangible resources, and the cocreation of value (Vargo and Lusch 2004). Trends such as the "sharing economy," with its ideal of collaborative consumption of idle resources (Donnelly et al. 2017), and "voluntary simplicity" in which consumers simplify their lifestyles rather than focus on possessions (Cherrier 2009) indicate that consumers can fulfill their needs without the possession of tangible products being a focal goal.

## Theoretical Implications and Directions for Future Research

In our literature review, we identified five routes to sustainable behavior change while delineating specific behavior change strategies within each route. The focus of the review portion of this article has been to identify *what* the main drivers of sustainable consumer behavior are according to existing research. In the next section, we will go further to highlight a set of theoretical propositions regarding *when* and *why* each of the routes to sustainable behavior change (i.e., the SHIFT factors) will be most relevant. We do so by outlining a set of key challenges that make sustainable consumption distinct from typical consumer behaviors: the self–other trade-off, the long

time horizon, the requirement of collective action, the problem of abstractness, and the need to replace automatic with controlled processes. We examine each of these challenges to sustainable consumer behavior change through the lens of our SHIFT framework and outline key theoretical propositions and directions for future research.

### The Self–Other Trade-Off

Our first challenge to sustainable consumer behavior is that consumers often perceive such actions as having some cost to the self, such as increased effort, increased cost, inferior quality, or inferior aesthetics (Luchs and Kumar 2017). At the same time, sustainable consumer behaviors lead to positive environmental and social impacts that are external to the self (Campbell and Winterich 2018). Thus, although the traditional view of consumer behavior holds that consumers will choose and use products and services in ways that satisfy their own wants and needs (Solomon, White, and Dahl 2017), views of sustainable consumer behaviors often imply putting aside wants that are relevant to the self and prioritizing and valuing entities that are outside of the self (e.g., other people, the environment, future generations, etc.).

The self–other trade-off has implications for how social influence might operate in the context of encouraging sustainable consumer behaviors. Although sustainable consumption often comes at some cost to the self, we suggest that identity signaling can be a self-relevant positive repercussion that can outweigh the costs of sustainable action. This assertion is supported by work showing that consumers are more likely to select sustainable options when the setting is public or status motives are activated (Green and Peloza 2014; Griskevicius, Tybur, and Bergh 2010). A novel proposition building on this work is that product symbolism might have more impact on consumer attitudes and choices when a product is positioned on sustainable versus traditional attributes. By the term "symbolic," we refer to the notion that some products are better able to convey important information about the self to others (Berger and Heath 2007; White and Argo 2011). The marketer could highlight either symbolic benefits (i.e., convey relevant information about the self to others) or functional aspects (i.e., information about satisfying practical needs) linked to a product (Bhat and Reddy 1998). Because there may be fewer direct self-benefits related to a sustainable action, linking a sustainable option with symbolic benefits could be a fruitful strategy.

**P1:** When a given behavior or product is positioned on the basis of its symbolic attributes (vs. functional attributes), consumers may exhibit more positive attitudes and behaviors if the option is framed in terms of being sustainable versus a traditional product.

Another way of overcoming the self–other trade-off is to consider the individual self (Gardner, Gabriel, and Lee 1999). In particular, how the individual views his or her own self-concept might predict sustainable consumer behaviors.

Whereas some individuals tend to have a more independent view of the self (i.e., the self is separate and distinct from others), some have a more interdependent self-construal (i.e., the self is connected with others; Markus and Kitayama 1991). One possibility is that those who think of the self in terms of an interdependent self-construal (both as a measured individual difference and as a primed mindset; White, Argo, and Sengupta 2012) might be more inclined to engage in sustainable behaviors (Arnocky, Stroink, and DeCicco 2007), particularly when such actions assist ingroup members (Duclos and Barasch 2014). Moreover, research could examine how to activate even broader, more transcendent construals of the self that encompass not only the self and close others but also other species and the biosphere. Encouraging such transcendent self-views might effectively increase eco-friendly actions.

**P<sub>2</sub>:** Encouraging the self-concept to be seen as broader than the self (either interdependent or transcendent) will lead to increases in sustainable behaviors.

At the same time, a specific focus on the individual self might be linked to sustainable actions in a way that overcomes uncertainty and is motivating. Giving people a sense of agency (i.e., allowing individuals to perceive themselves as the causal agents of behavioral outcomes) offers them a perception of empowerment and the ability to actually effect change. This might be done through priming of agency to motivate individuals to achieve a given sustainable goal (van der Weiden, Aarts, and Ruys 2013). Because outcomes of sustainable actions are often abstract and uncertain, agency priming might be a relevant motivational tool in the domain of sustainable behavior change. Thus:

**P<sub>3</sub>:** Agency primes will lead to an increased tendency to engage in sustainable behaviors.

Research on the individual self in prosocial contexts also highlights the potential importance of moral identity in overcoming the self–other trade-off. Moral identity refers to a cognitive schema around moral traits, goals, and values (Aquino and Reed 2002). The strength of moral identity can vary as an individual difference (e.g., moral identity centrality), and it can be activated by situational priming (Aquino et al. 2009). Moral identity predicts altruistic and ethical behaviors (Aquino and Reed 2002), and those higher in moral identity appear to have an expansive “circle of moral regard” that includes entities further from the self such as outgroup members (Reed and Aquino 2003). Because of this, individuals who are high in moral identity or who have moral identity primed in some way might be more likely to endure some costs to the self to contribute to a greater good. Although research has looked at moral identity in the domain of prosocial behaviors (Reed, Aquino, and Levy 2007), to our knowledge no prior work has examined whether individuals view sustainable behaviors as moral obligations that are predicted by moral identity.

**P<sub>4</sub>:** Both individual differences in moral identity and moral identity primes will increase sustainable consumer behaviors.

The self–other trade-off is also linked to how consumers perceive the costs and benefits of sustainable consumption. The literature lacks sufficient work examining the positive consumer associations with sustainability. Although there are a number of studies on the negative associations of sustainable consumption, there are very few that explicitly examine the positive associations. For example, sustainability might be linked to positive feelings about design when it is in the context of innovative, out-of-the-box thinking. Tesla, for example, capitalizes on such associations. Furthermore, it seems likely that sustainability has positive associations with health, local and fresh food, and the outdoors and nature. Sustainable options that connect to growing trends such as healthy and vibrant living, being a “foodie,” and being an outdoor enthusiast might do well. Although some research shows that the concept of “organic” is linked to positive associations around health and even being lower in calories (Schuldt and Schwarz 2010), more work could certainly examine implicit positive associations of sustainability in other domains as well.

**P<sub>5</sub>:** Sustainable options and behaviors might have unique positive associations when compared to traditional options, including being healthier, more innovative, and being linked to the outdoors and nature.

The self–other trade-off highlights a heavier research emphasis on the role of “negative self-related” emotions such as guilt and fear. Future work might look further at the role of “positive feeling states that are related to entities outside of the self” in influencing sustainable consumption. For example, researchers have examined the impact of awe—a sense of wonder we feel in the presence of something vast that transcends the individual self—on prosocial behaviors more generally (Piff et al. 2015). However, to our knowledge no work looks at how awe impacts sustainable consumer behaviors. Extant work does show that empathy might be linked to prosocial behaviors (Verhaert and Van den Poel 2011). Although empathy is defined in different ways, it is often conceptualized as an affective state “that stems from the apprehension of another’s emotional state or condition, and that is congruent with it” (Eisenberg and Miller 1987, p. 91). Moreover, outwardly focused emotions such as moral elevation might also predict sustainable actions. Moral elevation refers to feelings of warmth and expansion that are linked to admiration and affection in response to seeing exemplary behavior on the part of another individual (Aquino, McFerran, and Laven 2011; Haidt 2003). Examining emotions like awe, empathy, and moral elevation are all directions for future research.

**P<sub>6</sub>:** Outwardly focused positive emotions such as awe, empathy, and moral elevation will predict positive sustainable consumer behaviors.

Another possibility, linked to focusing on the self versus others, is to examine the role of aspirational social influence

in sustainable consumer behavior change. Is it possible to make the sustainable option or behavior socially desirable to the self by connecting it to aspirational role models such as celebrities and athletes? Although research covers the motivational roles of both ingroup members (Goldstein, Cialdini, and Griskevicius 2008) and dissociative outgroup others (White and Simpson 2013), there is a paucity of research on the impact of aspirational others on influencing sustainable consumer behaviors. One possibility is that aspirational branding could be harnessed to create positive, socially approved associations around the notion of sustainable lifestyles. Marketers could accomplish this by linking sustainable actions to aspirational others in a way that fosters a sense of desirability, luxury, and value linked to sustainable products and behaviors.

**P<sub>7</sub>:** Connecting sustainable products and behaviors to aspirational role models in a way that cultivates a sense of inspiration and luxury might increase sustainable behaviors.

### *Long Time Horizon*

Our second challenge to sustainability involves the reality that sustainable behaviors require a long time horizon for outcomes to be realized. Invariably, asking individuals to engage in a pro-environmental behavior means that some of the consequences will be achieved only at a future point in time (Amel et al. 2017). As we have seen, consumers view payoffs to be less desirable the further off the payoffs are in the future (Hardisty and Weber 2009). Relative to sustainable behaviors, most traditional consumer behaviors have consequences that are more immediate. Many payoffs linked to sustainability are so far off in the future that they will not even be observed in the consumer's own lifetime. We call this challenge the "long time horizon."

The notion of the long time horizon is related to the individual self in that it is linked to self-control. Indeed, self-regulation research demonstrates that people have a difficult time regulating the self to forgo benefits in the present for longer-term payoffs in the future (Baumeister et al. 1998; Muraven and Baumeister 2000). Sustainable behaviors present a unique self-regulation dilemma. Whereas most self-regulatory acts involve holding off on some positive reward now in order to receive a later payoff that reflects a self-relevant goal (e.g., not eating ice cream in the present so one can fit into a favorite dress on an upcoming vacation), sustainable behaviors involve putting off something positive now for a future positive outcome that is not only temporally distant but broader than the self (e.g., not purchasing a sporty car to reduce carbon emissions, the effects of which will only be realized in the future and will benefit the environment and other people). Although one would think that the self-control literature has much to say about sustainable behavior change, little work has explicitly looked at the role of self-regulation in determining sustainable actions. Existing work shows that those who have their regulatory resources depleted are more susceptible to temptations and impulse buying (Baumeister 2002). Given that many sustainable behaviors require an effortful cost to the self

in the short term for an uncertain future payoff, examining the dynamics of self-control in this domain could be productive. It is possible that sustainable behaviors require even more self-control than other self-control behaviors. For example, the same action (e.g., being vegan) could be positioned in terms of sustainability versus health goals, and it may be that self-regulation is more likely to fail for sustainability reasons given that such behaviors have fewer clear future implications for the self. Research might examine this and consider how to enhance self-regulation in the sustainability domain. One idea involves interventions to make the natural world part of the extended self, thereby transforming future environmental benefits into self-benefits, which could improve self-regulation.

**P<sub>8</sub>:** Those whose regulatory resources are somehow limited will be more likely to lapse in terms of engaging in sustainable behaviors (vs. other types self-control behaviors).

The long time horizon associated with sustainable behavior is related to feelings in that people often have to undergo hedonic costs to the self in the present to maximize some positive sustainable outcome in the future. Needless to say, this is often difficult, as people are usually hesitant to give up their own affective benefits. However, acting in a manner that helps others has been shown to provide positive affect, which is sometimes termed the "warm glow" effect (Giebelhausen et al. 2016). Focusing on how sustainable behaviors can create positive affect in the present might increase sustainable behaviors. We propose that:

**P<sub>9</sub>:** Sustainable behaviors that provide greater immediate (vs. long-term) warm glow feelings or positive affect will lead to decreased perceptions of the long time horizon and increase the likelihood of sustainable actions.

The long time horizon is linked to tangibility as well. Although people generally care less about future outcomes, the degree to which they care varies across individuals. People with higher "discount rates" care less about future outcomes (Hardisty and Weber 2009). Likewise, people with lower consideration of future consequences (Strathman et al. 1994) express weaker pro-environmental intentions (Joireman et al. 2001). Therefore, tangibility interventions (such as communicating local and proximal impacts) may be especially effective for these individuals. In contrast, those with low discount rates and high consideration of future consequences are already attuned to future outcomes and may be less influenced by tangibility interventions. Thus:

**P<sub>10</sub>:** Individuals with higher discount rates and low consideration of future consequences might be more sensitive to heightening the tangibility of environmental outcomes.

In addition, the long time horizon and self-other trade-off are both linked to how tangibility could play a role in determining sustainable consumer behaviors. Environmental impacts are not likely to be observed until the future, most likely by

future generations. As such, interventions that increase the tangibility of the effects of acting (or not acting) sustainably on future generations might encourage more sustainable actions. One possibility involves perspective-taking interventions (Maner et al. 2002) that encourage the consumer to adopt the viewpoint of future generations. Thus, we propose that:

**P<sub>11</sub>:** Individuals will be more motivated to engage in sustainable consumer behaviors when they either dispositionally or situationally take the perspective of future generations.

A final implication of the long time horizon is linked to all of the SHIFT factors. One striking facet of the current review is that most of the existing research involves surveys or experiments that take place at a single point in time (Iyer and Reczek 2017). Future research could profitably examine the longitudinal effects of different interventions on sustainable behaviors. Moreover, a dichotomy that our framework highlights is the short-term versus long-term focus of the different behavior change strategies. Although some of the constructs are driven by the immediate context and lead to short-term behavior change, other constructs lead to more enduring behavior change over the long term. For example, although tools related to feelings and cognition and habit-formation tools that focus on in-the-moment behavior shaping can be effective in the current context, sustainable actions can disappear once they are removed. It may be optimal to ensure a balance of in-the-moment behavior-shaping tools (e.g., incentives, penalties, making it easy) with ways of making these behaviors last over time (e.g., relating the actions to the consumer's morals, values, self-concept, self-consistency). Future research could test this possibility.

**P<sub>12</sub>:** Sustainable consumer behaviors may be best promoted over the long term by using a combination of in-the-moment tools and lasting-change tools.

### *The Challenge of Collective Action*

Sustainable behaviors often require collective as opposed to individual action (Bamberg, Rees, and Seebauer 2015). A large group of people must undertake sustainable behaviors for the benefits to be fully realized. This differs from traditional consumer behaviors in which the outcome is realized if the individual engages in the action alone. This is also distinct from other behaviors with a long time horizon like health promotion behaviors (e.g., exercising and eating healthy) because these can be enacted at the individual level with observable results.

The "challenge of collective action" is relevant to how social influence might operate when considering sustainable (vs. conventional) actions. When people observe others engaging in an action, this may increase perceptions of collective efficacy or "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura 1997, p. 477). Although collective efficacy has received little attention in the sustainability domain,

researchers have examined it in the contexts of organizational leadership (Chen and Bliese 2002) and political action (Velasquez and LaRose 2015). Drawing on this work, we suggest that collective efficacy can be a compelling motivator of sustainable consumer behavior. In fact, because sustainable outcomes require that actions be undertaken on a very large scale, it may be that collective action is more motivational in the domain of sustainability than other positive behavior domains. This is an open question for future research to examine. Thus:

**P<sub>13</sub>:** Messages communicating both the behaviors of others (collective action) and collective efficacy will increase the tendency to engage in sustainable actions.

The consideration of feelings has potential implications for how to overcome the challenge of collective action. Although some research has looked at the role of collective emotions (i.e., feelings that group members widely share as group-level goals are pursued or thwarted; Sullivan 2015), the types of emotions studied in this domain have been limited to past group actions resulting in guilt or pride (Antonetti and Maklan 2014; Bissing-Olson, Fielding, and Iyer 2016). Meanwhile, sustainable actions might be better fostered using other types of collective emotions. For example, collective feelings of anger and hope have been shown to predict collective action (Włodarczyk et al. 2017). Thus, we propose:

**P<sub>14</sub>:** Collective, future-oriented emotions such as anger and hope might foster sustainable consumer behaviors.

In a similar vein, cognitions about collective actions might also facilitate sustainable behaviors. Because sustainable behaviors have the unique property of requiring collective action, one possibility is that communicating collective-level outcomes such as climate justice could be influential in encouraging such behaviors. Although thoughts about perceived ability to restore justice have been shown to lead to actions such as selecting fair-trade products (White, MacDonnell, and Ellard 2012), it might be the case that conveying collective notions of justice (e.g., communicating information about collective impacts and consequences of unjust, unsustainable actions) would be impactful in the domain of encouraging sustainable consumer behaviors. In particular, communication about inequitable distributions of negative environmental threats and how these are felt by communities that are the most vulnerable might be a compelling message (Lazarus 1994).

**P<sub>15</sub>:** Communicating information about climate justice might motivate sustainable consumer behavior change.

Collective action is also linked to tangibility. Anecdotally, a popular technique for motivating green behavior is to advertise the collective impact. For example, "If everyone in the United States washed their clothes with cold water instead of hot, we would save around 30 million tons of CO<sub>2</sub> per year" ("Snappy Living" 2011). Despite the popularity of this type of messaging to promote green behavior in an applied context, to the best of our knowledge it has not been tested in the academic literature.

We predict that this type of messaging has differential impacts for tangible versus intangible outcomes due to two opposing forces. On the one hand, collective impact framing highlights the collective action problem (e.g., “There’s no way everyone in the U.S. would do this!”), which might decrease sustainable action. On the other hand, it scales up the perceived size of the impact, which could increase sustainable behavior (Camilleri and Larrick 2014). Because people are often insensitive to large numeric changes in environmental outcomes (Schkade and Payne 1994), such that “3 million” tons of CO<sub>2</sub> would be treated the same as “300 million,” it may be more effective to use tangible representations featuring visual images and analogies (e.g., “a garbage heap the size of the Empire State Building”).

**P<sub>16</sub>:** Tangible (vs. intangible) collective impact framing increases pro-environmental behavior.

### *The Need to Replace Automatic with Controlled Processes*

We note that many unsustainable behaviors have become learned in ways that make them automatic rather than controlled in nature. Engaging in sustainable consumption thus often means (at least initially) replacing relatively automatic behavioral responses with more effortful new responses (e.g., carrying one’s own shopping bag). This challenge can be related to habit formation. Recall that one means of influencing habitual change is by leveraging discontinuity, or the notion that major life change events can allow for other forms of habit change to occur. It is also possible that a certain mindset (beyond rare major life changes) can lead to habit change (Price et al. 2017). Individuals who have a “fresh start” mindset exhibit more positive attitudes toward products that allow for a fresh start, and they hold more positive intentions to donate to charities focused on giving recipients a new beginning (Price et al. 2017). The authors define a fresh start mindset as “a belief that people can make a new start, get a new beginning, and chart a new course in life, regardless of their past or present circumstances” (p. 22), and they show that it can be both measured and manipulated. A fresh start mindset might be applicable in terms of habit formation. Taking a “fresh start” view of a new behavior might serve as a form of discontinuity that makes habit change more likely.

**P<sub>17</sub>:** Those who have a fresh start mindset (measured or manipulated) will be more inclined to change to sustainable consumer behavior habits.

Although the adoption of sustainable behavior often requires overriding an automatic habit with a controlled one, this process may be facilitated by tangibility. Because tangible outcomes are more vivid and immediate, they may provoke more experiential (rather than analytic) processing (Chaiken and Trope 1999), leading people to base their decisions more on emotions and heuristics. Therefore, tangibility may increase the effectiveness of heuristic-based interventions (such as defaults or framing) and

decrease the effectiveness of calculation-based interventions (such as attribute scaling; Camilleri and Larrick 2014). For example, when buying a car online, representing the fuel efficiency as cost per 100,000 miles may be more effective, whereas when buying a car in person, a personal anecdote from the salesman about rarely needing to fill up the tank might be more effective. Thus, we propose:

**P<sub>18</sub>:** Tangibility interventions shift people from analytic to experiential processing and will therefore moderate the effectiveness of other interventions.

### *The Problem of Abstractness*

Our last challenge to encouraging sustainable consumer behaviors is that such actions are often characterized as being abstract, uncertain, and difficult for the consumer to grasp (Reczek, Trudel, and White 2018). Furthermore, the consequences of sustainable actions can involve uncertain and fuzzy outcomes (Weber 2010). Although distant future outcomes are often abstract, immediate and local environmental outcomes are also frequently abstract (e.g., energy efficiency, air quality, biodiversity). Although traditional consumer behaviors can carry different elements of risk and uncertainty, the outcomes of choices in traditional consumer contexts are usually more clear and certain than they are in sustainable consumer contexts.

The problem of abstractness can be addressed by considering social influence. One reason why people are influenced by social factors is because we often look to the expectations and behaviors of others when the situation is uncertain (Cialdini 2007). There is evidence, for example, that unfamiliar behaviors are more likely to be influenced by norms than are more familiar behaviors (White and Simpson 2011). Thus, when the sustainable consumer behavior is in some way ambiguous (e.g., “Exactly what is the most sustainable option for baby diapers?”) or uncertain (e.g., “Will engaging in this behavior really have the desired impact?”), people may be more influenced by social factors. Those who are high in the individual differences of uncertainty avoidance (Hofstede 2001) might be more influenced by social factors when abstractness is high. Thus:

**P<sub>19</sub>:** When the sustainable action or the outcome is ambiguous, uncertain, or new in some way (vs. being clear, certain, and well-established), social factors such as the presence of, behaviors of, and/or expectations of others will be more influential in determining behavior. This might be pronounced among those high in uncertainty avoidance.

Habit formation can also be relevant in tackling the problem of abstractness. Climate change and other issues are serious, nebulous, and can have large-scale consequences, making the acts carried out by individuals seem small and inconsequential. This can lead to green fatigue, or demotivation that is the result of information overload and lack of hope for meaningful change (Strother and Fazal 2011), and such hopelessness can

be demotivating to consumers (Guyader, Ottosson, and Witell 2017). One solution may be to celebrate small and concrete wins that can positively reinforce further sustainable actions and keep consumers engaged.

**P<sub>20</sub>:** Rewarding small milestones will encourage consumers to continue engaging in environmentally friendly behaviors and help avoid green fatigue.

The problem of abstractness also relates to the individual self. In fact, one way to combat the problem of abstract and uncertain outcomes might be to directly consider how they could impact the individual self. As we have seen, making sustainable impacts and outcomes seem local and relevant to the self can encourage sustainable consumer behaviors. However, future research might consider other means of connecting sustainable outcomes more clearly to the self. For example, Hershfield et al. (2011) manipulated a focus on the future self by showing people a digital image of what their future self might look like. These researchers found that increasing connectedness to the future self increases willingness to invest in retirement savings (Hershfield et al. 2011). It is possible that manipulations that create a connection between the current and future self will lead to increases in sustainable consumer behaviors.

**P<sub>21</sub>:** Those consumers who are encouraged to focus on the future self will be more likely to engage in sustainable consumer behaviors.

Sustainable behaviors can also be made to feel less abstract by making the current emotional benefits and costs more concrete. Future work might examine which different communication modes are most appropriate for making individuals feel emotions linked to sustainable behaviors. Images are known to activate emotions more readily in contexts such as communicating about intergroup conflicts (Brantner, Lobinger, and Wetstein 2011). Visual information may best communicate how environmental issues will affect others in order to elicit concrete emotions, and these communications may potentially have an enhanced effect on those who are visualizers (Richardson 1977).

**P<sub>22</sub>:** Visual communications (vs. text) will be effective at eliciting other-focused emotions such as love and empathy and lead to greater participation in sustainable actions. This effect will be enhanced for individuals who are visualizers.

The problem of abstractness can be related to feelings. Allowing consumers to understand the impact of their actions might help facilitate relevant emotions and reduce perceived abstractness. In the domain of charitable giving, highlighting the impact has been shown to lead to greater emotional rewards attached to the behavior (Aknin et al. 2013). Previous work, however, has not looked at the specific emotions tied to impact in sustainable consumer behaviors. For example, making the potential impact clear and concrete may be more likely to lead to anticipatory pride (vs. other anticipatory states) linked to the sustainable action.

**P<sub>23</sub>:** Making the positive impact of sustainable behavior more certain in the present will result in greater pride and lead to greater likelihood of carrying out such behaviors in the future.

Feelings might also be linked to the problem of abstractness in another way. The ubiquity of social media and sharing exposes consumers to others who might communicate their actions linked to sustainability. For instance, people may share pictures of their commute by bike or by carpool, along with how they are feeling during the journey. Experiencing positive emotions leads to greater feelings of closeness (Van Boven et al. 2010; Waugh and Fredrickson 2006), and we tend to feel greater empathy for and thus more strongly experience the emotions of close others (Escalas and Stern 2003). Thus, close others sharing their emotions involved in carrying out sustainable behaviors should be more effective at reducing abstractness by increasing the strength of the emotions we expect to feel when we engage in the behavior.

**P<sub>24</sub>:** Social distance will lead to emotional contagion when emotional responses to sustainable behaviors are shared with others, such that close (vs. distant) others sharing how they experience positive emotions when carrying out sustainable behavior will make the benefits of the behavior seem more concrete.

Finally, the problem of abstractness is linked to tangibility. One possible way to increase tangibility of actions and outcomes (and to make information less abstract) is to employ analogies. Because sustainability is an abstract and intangible concept, comparing a sustainable action or outcome to a familiar experience or example unrelated to sustainability might facilitate greater connection between the consumer and the concept of sustainability. Thus, future work might examine the following:

**P<sub>25</sub>:** When the action or behavior is sustainable (vs. traditional), analogies will be more likely to encourage consumer behavior change.

## How to Use the SHIFT Framework in Practice

Our SHIFT framework shows different tactics that can be used to influence sustainable consumer behaviors (see Web Appendix A). We note that no single route to behavior change identified by the framework works “best.” Rather, we suggest that practitioners should understand the specific behavior, the context in which the behavior will occur, the intended target of the intervention, and the barriers (and benefits) associated with the behavior (see Web Appendix B; for more detailed information on how to think about the relevant factors to encourage behavior change, see McKenzie-Mohr 2000; Peattie 2001; Schultz 2014; Schultz and Fielding 2014). We note that there are often multiple barriers to sustainable behavior change, and therefore combining strategies can be impactful (Osterhus 1997; Stern 2011).



Although our framework highlights the different drivers of sustainable behavior change, it can also be used to think about potential barriers to sustainable action. In particular, one way to use the framework is to consider the primary and secondary barriers to engaging in the desired behavior and then select relevant tactics to overcome them. A primary barrier is the barrier that elicits the strongest avoidance response in the target consumer, and a secondary barrier is the factor that elicits the next strongest avoidance response. Thinking about barriers in terms of the SHIFT factors (e.g., a barrier can be linked to social influence [the sustainable action is seen as socially undesirable] and habit [the existing unsustainable action is highly habitual]) can help the practitioner draw connections to the tools within the framework that might facilitate change. We provide examples of possible focal consumer behaviors in Web Appendix C, and Web Appendix D shows potential strategies that can be drawn from our framework based on the primary and secondary barriers to action.

In one example of identifying primary and secondary barriers that explicitly relied on the SHIFT framework, White and Simpson (2013) gathered data on the motives of residents who were hesitant to engage in grasscycling (i.e., composting grass clippings by allowing them to decompose naturally). The researchers discovered that residents' hesitance was due to barriers related to social norms (primary barrier: the norm was that nobody was engaging in the behavior and that it did not seem approved of) and individual factors (secondary barrier: the behavior was perceived to be costly to the self). The authors developed and tested two different solutions that addressed the key barriers by using strategies related to social norms and the individual self. These researchers created messages that were delivered to residents on door hangers, and they tracked residential grasscycling practices over time (both before and after the intervention). First, when the individual was prompted to think of the collective self ("Think about how we as a community can make a difference"), descriptive norms ("Your neighbors are grasscycling—you can too") and injunctive norms ("Your neighbors want you to grasscycle") were most effective. Second, when the person was prompted to think about the individual self ("Think about how you as an individual can make a difference"), highlighting relevant self-benefits worked best ("Grasscycling improves your lawn quality"). By tackling the key barriers linked to social influence and the individual self, the authors increased sustainable behaviors in a large-scale field study.

Another example involves Our Horizon, which is a non-profit with a mandate to discourage gasoline consumption caused by driving automobiles. Two focal barriers to decreasing gasoline usage are social factors (it is both socially normative and socially desirable to drive) and tangibility (consumers report uncertainty about the impacts of driving less). Our Horizon has responded by developing a strategy to target both social norms and tangibility. Our Horizon encourages local governments to implement warning labels on gas pumps similarly to the way many nations now place warning labels on tobacco packaging. The labels that the organization plans to implement serve to

both (1) help communicate what is normatively approved of and (2) describe concrete and personally relevant local impacts (see Web Appendix F). Although we offer examples to illustrate the SHIFT principles in practice, it is important to recognize that different behaviors and segments will have unique barriers and benefits to behavior change. We include more examples of using barriers to identify tactics based on our Framework in Web Appendix E.

As we have seen, thinking about the primary and secondary barriers to pro-environmental behavior change is one means by which marketers, policy makers, and nonprofits can use the SHIFT framework. However, there is one important nuance: the practitioner should make sure that the tools employed are complementary rather than oppositional to each another. For example, in the grasscycling study described previously, messaging that reflected the individual self along with social norms was less effective than communicating about the individual self and self-benefits (or the collective self and social norms), because consistent messaging leads to goal-compatible outcomes (White and Simpson 2013). In another example, highlighting the extrinsic benefits of engaging in a sustainable action along with intrinsic benefits can be less impactful than communicating intrinsic benefits alone, because extrinsic motives are not compatible with intrinsic motives (Bolderdijk, Lehman, and Geller 2012; Edinger-Schons et al. 2018).

## Concluding Thoughts

A question with practical and theoretical significance is whether our framework can be applied to other behaviors, such as prosocial actions or health behaviors, or if the factors are unique to sustainable behaviors. We conjecture that many of the facets of our framework may apply to the other positive behaviors as well. However, we note that there are some elements that may be unique to sustainable consumption. For example, health behaviors are not subject to the challenge of collective versus individual action to the same degree that sustainable behaviors are. Although health behavior changes can collectively have positive economic and societal benefits (WHO 2014), health behavior change also undeniably primarily has individual benefits (OECD and WHO 2015). Although health and prosocial behaviors (e.g., charitable giving) both carry problems of tangibility, sustainable behaviors and outcomes are likely perceived as being even less tangible than health and prosocial behaviors. This is an open question for future research to explore, and applying the framework in other domains certainly has theoretical and practical potential.

In summary, we have reviewed and categorized the behavioral science literature, uncovering five broad psychological routes to encouraging sustainable consumer behavior change: Social influence, Habit formation, the Individual self, Feelings and cognition, and Tangibility. We anticipate that this SHIFT framework will be helpful in guiding practitioners interested in fostering sustainable consumer behavior. Moreover, we expect

that this framework will assist researchers in conceptualizing different means of influencing sustainable consumer behavior and will spur further research in this essential domain. At the end of the day, we hope that our framework will help stimulate sustainable consumer behavior change and allow firms wishing to operate in a sustainable manner to do so in ways that can maximize both their sustainability and strategic business goals.

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### References

- Abrahamse, Wokje and Linda Steg (2013), "Social Influence Approaches to Encourage Resource Conservation: A Meta-Analysis," *Global Environmental Change*, 23 (6), 1773–85.
- Abrahamse, Wokje, Linda Steg, Charles Vlek, and Talib Rothengatter (2005), "A Review of Intervention Studies Aimed at Household Energy Conservation," *Journal of Environmental Psychology*, 25 (3), 273–91.
- Abrahamse, Wokje, Linda Steg, Charles Vlek, and Talib Rothengatter (2007), "The Effect of Tailored Information, Goal Setting, and Feedback on Household Energy Use, Energy Related Behaviors, and Behavioral Determinants," *Journal of Environmental Psychology*, 27 (4), 265–76.
- Akerlof, Karen, Edward W. Maibach, Dennis Fitzgerald, Andrew Y. Ceden, and Amanda Neuman (2013), "Do People 'Personally Experience' Global Warming, and If so How, and Does It Matter?" *Global Environmental Change*, 23 (1), 81–91.
- Aknin, Lara B., Elizabeth W. Dunn, Ashley V. Whillans, Adam M. Grant, and Michael I. Norton (2013), "Making a Difference Matters: Impact Unlocks the Emotional Benefits of Prosocial Spending," *Journal of Economic Behavior & Organization*, 88, 90–95.
- Alwitt, Linda F. and Robert E. Pitts (1996), "Predicting Purchase Intentions for an Environmentally Sensitive Product," *Journal of Consumer Psychology*, 5 (1), 49–64.
- Amel, Elise, Christie Manning, Britain Scott, and Susan Koger (2017), "Beyond the Roots of Human Inaction: Fostering Collective Effort Toward Ecosystem Conservation," *Science*, 356 (6335), 275–79.
- Anderson, W. Thomas and William H. Cunningham (1972), "The Socially Conscious Consumer," *Journal of Marketing*, 36 (3), 23–31.
- Antonetti, Paolo and Stan Maklan (2014), "Feelings That Make a Difference: How Guilt and Pride Convince Consumers of the Effectiveness of Sustainable Consumption Choices," *Journal of Business Ethics*, 124 (1), 117–34.
- Aquino, Karl, Dan Freeman, Americus Reed, Vivien K. G. Lim, and Will Felps (2009), "Testing a Social-Cognitive Model of Moral Behavior: The Interactive Influence of Situations and Moral Identity Centrality," *Journal of Personality and Social Psychology*, 97 (1), 123–41.
- Aquino, Karl, Brent McFerran, and Marjorie Laven (2011), "Moral Identity and the Experience of Moral Elevation in Response to Acts of Uncommon Goodness," *Journal of Personality and Social Psychology*, 100 (4), 703–18.
- Aquino, Karl and I. I. Reed (2002), "The Self-Importance of Moral Identity," *Journal of Personality and Social Psychology*, 83 (6), 1423–40.
- Armitage, Christopher J. and Mark Conner (2001), "Efficacy of the Theory of Planned Behaviour: A Meta-Analytic Review," *British Journal of Social Psychology*, 40 (4), 471–99.
- Arnocky, Steven, Taciano L. Milfont, and Jeffrey R. Nicol (2014), "Time Perspective and Sustainable Behaviour: Evidence for the Distinction Between Consideration of Immediate and Future Consequences," *Environment and Behaviour*, 46 (5), 556–82.
- Arnocky, Steven, Mirella Stroiink, and Teresa DeCicco (2007), "Self-Constraint Predicts Environmental Concern, Cooperation, and Conservation," *Journal of Environmental Psychology*, 27 (4), 255–64.
- Aspara, Jaakko, Xueming Luo, and Ravi Dhar (2017), "Effect of Intelligence on Consumers' Responsiveness to a Pro-environmental Tax: Evidence from Large-Scale Data on Car Acquisitions of Male Consumers," *Journal of Consumer Psychology*, 27 (4), 448–55.
- Atasoy, Ozgun and Carey K. Morewedge (2018), "Digital Goods Are Valued Less Than Physical Goods," *Journal of Consumer Research*, 44 (6), 1343–57.
- Auger, Pat and Timothy M. Devinney (2007), "Do What Consumers Say Matter? The Misalignment of Preferences with Unconstrained Ethical Intentions," *Journal of Business Ethics*, 76 (4), 361–83.
- Austin, John, David B. Hatfield, Angelica C. Grindle, and Jon S. Bailey (1993), "Increasing Recycling in Office Environments: The Effects of Specific, Informative Cues," *Journal of Applied Behavior Analysis*, 26 (2), 247–53.
- Baca-Motes, Katie, Amber Brown, Ayelet Gneezy, Elizabeth A. Keenan, and Leif D. Nelson (2012), "Commitment and Behavior Change: Evidence from the Field," *Journal of Consumer Research*, 39 (5), 1070–84.
- Bahl, Shalini, George R. Milne, Spencer M. Ross, David Glen Mick, Sonya A. Grier, Sunaina K. Chugani, et al. (2016), "Mindfulness: Its Transformative Potential for Consumer, Societal, and Environmental Well-Being," *Journal of Public Policy & Marketing*, 35 (2), 198–210.
- Balderjahn, Ingo, Mathias Peyer, Barbara Seegebarth, Klaus-Peter Wiedmann, and Anja Weber (2018), "The Many Faces of Sustainability-Conscious Consumers: A Category-Independent Typology," *Journal of Business Research*, 91, 83–93.
- Baltes, Margret M. and Scott C. Hayward (1976), "Application and Evaluation of Strategies to Reduce Pollution: Behavioral Control

- of Littering in a Football Stadium,” *Journal of Applied Psychology*, 61 (4), 501–06.
- Bamberg, Sebastian (2006), “Is a Residential Relocation a Good Opportunity to Change People’s Travel Behavior? Results from a Theory-Driven Intervention Study,” *Environment and Behavior*, 38 (6), 820–40.
- Bamberg, Sebastian, Marcel Hunecke, and Anke Blöbaum (2007), “Social Context, Personal Norms, and the Use of Public Transportation: Two Field Studies,” *Journal of Environmental Psychology*, 27 (3), 190–203.
- Bamberg, Sebastian, Jonas Rees, and Sebastian Seebauer (2015), “Collective Climate Action: Determinants of Participation Intention in Community-Based Pro-environmental Initiatives,” *Journal of Environmental Psychology*, 43, 155–65.
- Bandura, Albert (1977), “Self-Efficacy: Toward a Unifying Theory of Behavioral Change,” *Psychological Review*, 84 (2), 191–215.
- Bandura, Albert (1997), *Self-Efficacy: The Exercise of Control*. New York: W H Freeman/Times Books/ Henry Holt & Co.
- Banerjee, Subhabrata, Charles S. Gulas, and Easwar Iyer (1995), “Shades of Green: A Multidimensional Analysis of Environmental Advertising,” *Journal of Advertising*, 24 (2), 21–31.
- Banerjee, Subhabrata Bobby, Easwar S. Iyer, and Rajiv K. Kashyap (2003), “Corporate Environmentalism: Antecedents and Influence of Industry Type,” *Journal of Marketing*, 67 (2), 106–22.
- Barber, Nelson A. and Cynthia Deale (2014), “Tapping Mindfulness to Shape Hotel Guests’ Sustainable Behavior,” *Cornell Hospitality Quarterly*, 55 (1), 100–14.
- Bartels, Jos and Karen Hoogendam (2011), “The Role of Social Identity and Attitudes Toward Sustainability Brands in Buying Behaviors for Organic Products,” *Journal of Brand Management*, 18 (9), 697–708.
- Bartels, Jos and Marleen C. Onwezen (2014), “Consumers’ Willingness to Buy Products with Environmental and Ethical Claims: The Roles of Social Representations and Social Identity,” *International Journal of Consumer Studies*, 38 (1), 82–89.
- Baumeister, Roy F. (2002), “Yielding to Temptation: Self-Control Failure, Impulsive Purchasing, and Consumer Behavior,” *Journal of Consumer Research*, 28 (4), 670–76.
- Baumeister, Roy F., Ellen Bratslavsky, Mark Muraven, and Dianne M. Tice (1998), “Ego Depletion: Is the Active Self a Limited Resource?” *Journal of Personality and Social Psychology*, 74 (5), 1252–65.
- Belk, Russell W. (1988), “Possessions and the Extended Self,” *Journal of Consumer Research*, 15 (2), 139–68.
- Belk, Russell W. (2013), “Extended Self in a Digital World,” *Journal of Consumer Research*, 40 (3), 477–500.
- Berger, Jonah and Chip Heath (2007), “Where Consumers Diverge from Others: Identity Signaling and Product Domains,” *Journal of Consumer Research*, 34 (2), 121–34.
- Bhat, Subodh and Srinivas K. Reddy (1998), “Symbolic and Functional Positioning of Brands,” *Journal of Consumer Marketing*, 15 (1), 32–43.
- Bissing-Olson, Megan J., Kelly S. Fielding, and Aarti Iyer (2016), “Experiences of Pride, Not Guilt, Predict Pro-environmental Behavior When Pro-environmental Descriptive Norms Are More Positive,” *Journal of Environmental Psychology*, 45, 145–53.
- Bodur, H. Onur, Kimberly M. Duval, and Bianca Grohmann (2015), “Will You Purchase Environmentally Friendly Products? Using Prediction Requests to Increase Choice of Sustainable Products,” *Journal of Business Ethics*, 129 (1), 59–75.
- Bolderdijk, J. W., P. K. Lehman, and E. S. Geller (2012), “Encouraging Pro-environmental Behaviour with Rewards and Penalties,” in *Environmental Psychology: An Introduction*, Chap. 22. Hoboken, NJ: John Wiley & Sons, 273–82.
- Bolderdijk, Jan Willem and Linda Steg (2015), “Promoting Sustainable Consumption: The Risks of Using Financial Incentives,” in *Handbook of Research on Sustainable Consumption*, Chap. 21. Cheltenham, UK: Edward Elgar Publishing, 328–42.
- Bollinger, Bryan and Kenneth Gillingham (2012), “Peer Effects in the Diffusion of Solar Photovoltaic Panels,” *Marketing Science*, 31 (6), 873–1025.
- Borin, Norm, Douglas C. Cerf, and Ragi Krishnan (2011), “Consumer Effects of Environmental Impact in Product Labeling,” *Journal of Consumer Marketing*, 28 (1), 76–86.
- Bowles, Samuel (2008), “Policies Designed for Self-Interested Citizens May Undermine ‘The Moral Sentiments.’ Evidence from Economic Experiments,” *Science*, 320 (5883), 1605–09.
- Brantner, Cornelia, Katharina Lobinger, and Irmgard Wetzstein (2011), “Effects of Visual Framing on Emotional Responses and Evaluations of News Stories About the Gaza Conflict 2009,” *Journalism & Mass Communication Quarterly*, 88 (3), 523–40.
- Brothers, Kevin J., Patricia J. Krantz, and Lynn E. McClannahan (1994), “Office Paper Recycling: A Function of Container Proximity,” *Journal of Applied Behavior Analysis*, 27 (1), 153–60.
- Brough, Aaron R., James E. B. Wilkie, Jingjing Ma, Mathew S. Isaac, and David Gal (2016), “Is Eco-Friendly Unmanly? The Green-Feminine Stereotype and Its Effect on Sustainable Consumption,” *Journal of Consumer Research*, 43 (4), 567–82.
- Brown, Tom J. and Peter A. Dacin (1997), “The Company and the Product: Corporate Associations and Consumer Product Responses,” *Journal of Marketing*, 61 (1), 68–84.
- Bull, Joe (2012), “Loads of Green Washing—Can Behavioural Economics Increase Willingness-to-Pay for Efficient Washing Machines in the UK?” *Energy Policy*, 50, 242–52.
- Burn, Shawn M. and Stuart Oskamp (1986), “Increasing Community Recycling with Persuasive Communication and Public Commitment,” *Journal of Applied Social Psychology*, 16 (1), 29–41.
- Cairns, S., C. Newson, and A. Davis (2010), “Understanding Successful Workplace Travel Initiatives in the UK,” *Transportation Research Part A: Policy and Practice*, 44 (7), 473–94.
- Camilleri, Adrian R. and Richard P. Larrick (2014), “Metric and Scale Design as Choice Architecture Tools,” *Journal of Public Policy & Marketing*, 33 (1), 108–25.
- Campbell, Margaret C. and Karen Page Winterich (2018), “A Framework for the Consumer Psychology of Morality in the Marketplace,” *Journal of Consumer Psychology*, 28 (2), 167–79.
- Carrete, Lorena, Castaño Raquel, Felix Reto, Centeno Edgar, and González Eva (2012), “Green Consumer Behavior in an Emerging Economy: Confusion, Credibility, and Compatibility,” *Journal of Consumer Marketing*, 29 (7), 470–81.
- Carrus, Giuseppe, Paola Passafaro, and Mirilia Bonnes (2008), “Emotions, Habits and Rational Choices in Ecological Behaviours: The Case of Recycling and Use of Public Transportation,” *Journal of Environmental Psychology*, 28 (1), 51–62.

- Catlin, Jesse R. and Yitong Wang (2013), "Recycling Gone Bad: When the Option to Recycle Increases Resource Consumption," *Journal of Consumer Psychology*, 23 (1), 122–27.
- Chaiken, Shelly and Yaacov Trope (1999), *Dual-Process Theories in Social Psychology*. New York: Guilford Press.
- Chang, Chingching (2011), "Feeling Ambivalent About Going Green," *Journal of Advertising*, 40 (4), 19–32.
- Chen, Gilad and Paul D. Bliese (2002), "The Role of Different Levels of Leadership in Predicting Self- and Collective Efficacy: Evidence for Discontinuity," *The Journal of Applied Psychology*, 87 (3), 549–56.
- Chen, Yu-Shan and Ching-Hsun Chang (2013), "Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk," *Journal of Business Ethics*, 114 (3), 489–500.
- Chernev, Alexander and Sean Blair (2015), "Doing Well by Doing Good: The Benevolent Halo of Corporate Social Responsibility," *Journal of Consumer Research*, 41 (6), 1412–25.
- Cherrier, Helene (2009), "Anti-consumption Discourses and Consumer-Resistant Identities," *Journal of Business Research*, 62 (2), 181–90.
- Chiang, Teresa, Gokhan Mevlevioglu, Sukumar Natarajan, Julian Padget, and Ian Walker (2014), "Inducing [Sub]conscious Energy Behaviour Through Visually Displayed Energy Information: A Case Study in University Accommodation," *Energy and Buildings*, 70, 507–15.
- Cialdini, Robert B. (2003), "Crafting Normative Messages to Protect the Environment," *Current Directions in Psychological Science*, 12 (4), 105–09.
- Cialdini, Robert B. (2007), *Influence: The Psychology of Persuasion*. New York: Harper Collins.
- Cialdini, Robert B., Linda J. Demaine, Brad J. Sagarin, Daniel W. Barrett, Kelton Rhoads, and Patricia L. Winter (2006), "Managing Social Norms for Persuasive Impact," *Social Influence*, 1 (1), 3–15.
- Cialdini, Robert B., Raymond R. Reno, and Carl A. Kallgren (1990), "A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places," *Journal of Personality and Social Psychology*, 58 (6), 1015–26.
- Cleveland, Mark, Maria Kalamas, and Michel Laroche (2005), "Shades of Green: Linking Environmental Locus of Control and Pro-environmental Behaviors," *Journal of Consumer Marketing*, 22 (4), 198–212.
- Cornelissen, Gert, Mario Pandelaere, Luk Warlop, and Siegfried Dewitte (2008), "Positive Cueing: Promoting Sustainable Consumer Behavior by Cueing Common Environmental Behaviors as Environmental," *International Journal of Research in Marketing*, 25 (1), 46–55.
- Corral-Verdugo, Víctor, Mirilia Bonnes, César Tapia-Fonllem, Blanca Fraijo-Sing, Martha Frías-Armenta, and Giuseppe Carrus (2009), "Correlates of Pro-Sustainability Orientation: The Affinity Towards Diversity," *Journal of Environmental Psychology*, 29 (1), 34–43.
- Csikszentmihalyi, Mihaly (2000), "The Costs and Benefits of Consuming," *Journal of Consumer Research*, 27 (2), 267–72.
- Daamen, Dancker D. L., Henk Staats, Henk A. M. Wilke, and Mirjam Engelen (2001), "Improving Environmental Behavior in Companies: The Effectiveness of Tailored Versus Nontailored Interventions," *Environment and Behavior*, 33 (2), 229–48.
- De Leon, Iser G. and R. Wayne Fuqua (1995), "The Effects of Public Commitment and Group Feedback on Curbside Recycling," *Environment and Behavior*, 27 (2), 233–50.
- Delmas, Magali A., Miriam Fischlein, and Omar I. Asensio (2013), "Information Strategies and Energy Conservation Behavior: A Meta-Analysis of Experimental Studies from 1975 to 2012," *Energy Policy*, 61, 729–39.
- Devezer, Berna, David E. Sprott, Eric R. Spangenberg, and Sandor Czezar (2014), "Consumer Well-Being: Effects of Subgoal Failures and Goal Importance," *Journal of Marketing*, 78 (2), 118–34.
- Devine-Wright, Patrick and Yuko Howes (2010), "Disruption to Place Attachment and the Protection of Restorative Environments: A Wind Energy Case Study," *Journal of Environmental Psychology*, 30 (3), 271–80.
- Diamantopoulos, Adamantios, Bodo B. Schlegelmilch, Rudolf R. Sinkovics, and Greg M. Bohlen (2003), "Can Socio-Demographics Still Play a Role in Profiling Green Consumers? A Review of the Evidence and an Empirical Investigation," *Journal of Business Research*, 56 (6), 465–80.
- Diamond, William D. and Ben Z. Loewy (1991), "Effects of Probabilistic Rewards on Recycling Attitudes and Behavior," *Journal of Applied Social Psychology*, 21 (19), 1590–607.
- Dickerson, Chris Ann, Ruth Thibodeau, Elliot Aronson, and Dayna Miller (1992), "Using Cognitive Dissonance to Encourage Water Conservation," *Journal of Applied Social Psychology*, 22 (11), 841–54.
- Dickinson, Janis (2009), "The People Paradox: Self-Esteem Striving, Immortality Ideologies, and Human Response to Climate Change," *Ecology and Society*, 14 (1), 34.
- Dietz, Thomas, Linda Kalof, and Paul C. Stern (2002), "Gender, Values, and Environmentalism," *Social Science Quarterly*, 83 (1), 353–64.
- Donald, I. J., S. R. Cooper, and S. M. Conchie (2014), "An Extended Theory of Planned Behavior Model of the Psychological Factors Affecting Commuters' Transport Mode Use," *Journal of Environmental Psychology*, 40, 39–48.
- Donnelly, Grant E., Cait Lamberton, Rebecca Walker Reczek, and Michael I. Norton (2017), "Social Recycling Transforms Unwanted Goods into Happiness," *Journal of the Association for Consumer Research*, 2 (1), 48–63.
- Dowd, Kylie and Karen J. Burke (2013), "The Influence of Ethical Values and Food Choice Motivations on Intentions to Purchase Sustainably Sourced Foods," *Appetite*, 69, 137–44.
- Duclos, Rod and Alixandra Barasch (2014), "Prosocial Behavior in Intergroup Relations: How Donor Self-Constraint and Recipient Group-Membership Shape Generosity," *Journal of Consumer Research*, 41 (1), 93–108.
- Dunning, David (2007), "Self-Image Motives and Consumer Behavior: How Sacrosanct Self-Beliefs Sway Preferences in the Marketplace," *Journal of Consumer Psychology*, 17 (4), 237–49.
- Dwyer, Patrick C., Alexander Maki, and Alexander J. Rothman (2015), "Promoting Energy Conservation Behavior in Public Settings: The Influence of Social Norms and Personal Responsibility," *Journal of Environmental Psychology*, 41, 30–34.

- Eagly, Alice H. (2009), "The His and Hers of Prosocial Behavior: An Examination of the Social Psychology of Gender," *American Psychologist*, 64 (8), 644–58.
- Edinger-Schons, Laura, Jenni Sipilä, Sankar Sen, Gina Mende, and Jan Wieseke (2018), "Are Two Reasons Better Than One? The Role of Appeal Type in Consumer Responses to Sustainable Products," *Journal of Consumer Psychology*, 28 (4), 644–64.
- Eisenberg, Nancy and Paul A. Miller (1987), "The Relation of Empathy to Prosocial and Related Behaviors," *Psychological Bulletin*, 101 (1), 91–119.
- Ellen, Pam Scholder, Joshua Lyle Wiener, and Cathy Cobb-Walgren (1991), "The Role of Perceived Consumer Effectiveness in Motivating Environmentally Conscious Behaviors," *Journal of Public Policy & Marketing*, 10 (2), 102–17.
- Epstein, Seymour (2003), "Cognitive-Experiential Self-Theory of Personality," in *Handbook of Psychology*, Chap 7. Hoboken, NJ: John Wiley & Sons, 159–84.
- Escalas, Jennifer Edson and Barbara B. Stern (2003), "Sympathy and Empathy: Emotional Responses to Advertising Dramas," *Journal of Consumer Research*, 29 (4), 566–78.
- Evans, Laurel, Gregory R. Maio, Adam Corner, Carl J. Hodgetts, Sameera Ahmed, and Ulrike Hahn (2013), "Self-Interest and Pro-environmental Behaviour," *Nature Climate Change*, 3, 122–25.
- Everett, Peter B., Scott C. Hayward, and Andrew W. Meyers (1974), "The Effects of a Token Reinforcement Procedure on Bus Ridership," *Journal of Applied Behavior Analysis*, 7 (1), 1–9.
- Feldman, Lauren and P. Sol Hart (2018), "Is There Any Hope? How Climate Change News Imagery and Text Influence Audience Emotions and Support for Climate Mitigation Policies," *Risk Analysis*, 38 (3), 585–602.
- Fennis, Bob M., Marieke A. Adriaanse, Wolfgang Stroebe, and Bert Pol (2011), "Bridging the Intention–Behavior Gap: Inducing Implementation Intentions Through Persuasive Appeals," *Journal of Consumer Psychology*, 21 (3), 302–11.
- Ferguson, Mark A., Nyla R. Branscombe, and Katherine J. Reynolds (2011), "The Effect of Intergroup Comparison on Willingness to Perform Sustainable Behavior," *Journal of Environmental Psychology*, 31 (4), 275–81.
- Feygina, Irina, John T. Jost, and Rachel E. Goldsmith (2010), "System Justification, the Denial of Global Warming, and the Possibility of 'System-Sanctioned Change,'" *Personality and Social Psychology Bulletin*, 36 (3), 326–38.
- Fielding, Kelly S., Deborah J. Terry, Barbara M. Masser, and Michael A. Hogg (2008), "Integrating Social Identity Theory and the Theory of Planned Behaviour to Explain Decisions to Engage in Sustainable Agricultural Practices," *British Journal of Social Psychology*, 47 (1), 23–48.
- Fischer, Corinna (2008), "Feedback on Household Electricity Consumption: A Tool for Saving Energy?" *Energy Efficiency*, 1 (1), 79–104.
- Fornara, Ferdinando, Giuseppe Carrus, Paola Passafaro, and Mirilia Bonnes (2011), "Distinguishing the Sources of Normative Influence on Pro-environmental Behaviors: The Role of Local Norms in Household Waste Recycling," *Group Processes & Intergroup Relations*, 14 (5), 623–35.
- Fraj, Elena and Eva Martinez (2006), "Influence of Personality on Ecological Consumer Behaviour," *Journal of Consumer Behaviour*, 5 (3), 167–81.
- Frederiks, Elisha R., Karen Stenner, and Elizabeth V. Hobman (2015), "Household Energy Use: Applying Behavioural Economics to Understand Consumer Decision Making and Behaviour," *Renewable and Sustainable Energy Reviews*, 41, 1385–94.
- Fullerton, Don and Thomas C. Kinnaman (1995), "Garbage, Recycling, and Illicit Burning or Dumping," *Journal of Environmental Economics and Management*, 29 (1), 78–91.
- Gamba, Raymond J. and Stuart Oskamp (1994), "Factors Influencing Community Residents' Participation in Commingled Curbside Recycling Programs," *Environment and Behavior*, 26 (5), 587–612.
- Gardner, Wendi L., Shira Gabriel, and Angela Y. Lee (1999), "'I' Value Freedom, but 'We' Value Relationships: Self-Construal Priming Mirrors Cultural Differences in Judgment," *Psychological Science*, 10 (4), 321–26.
- Garvey, Aaron M. and Lisa E. Bolton (2017), "Eco-Product Choice Cuts Both Ways: How Pro-environmental Licensing Versus Reinforcement is Contingent upon Environmental Consciousness," *Journal of Public Policy & Marketing*, 36 (2), 284–98.
- Gatersleben, Birgitta, Linda Steg, and Charles Vlek (2002), "Measurement and Determinants of Environmentally Significant Consumer Behavior," *Environment and Behavior*, 34 (3), 335–62.
- Geller, E. Scott, R. B. Bechtel, and A. Churchman (2002), "The Challenge of Increasing Pro-environmental Behavior," in *Handbook of Environmental Psychology*, R. B. Bechtel and A. Churchman, eds. New York: John Wiley & Sons, 525–40.
- Gershoff, Andrew D. and Judy K. Frels (2014), "What Makes It Green? The Role of Centrality of Green Attributes in Evaluations of the Greenness of Products," *Journal of Marketing*, 79 (1), 97–110.
- Giebelhausen, Michael, HaeEun Helen Chun, J. Joseph Cronin Jr., and G. Tomas M. Hult (2016), "Adjusting the Warm-Glow Thermostat: How Incentivizing Participation in Voluntary Green Programs Moderates Their Impact on Service Satisfaction," *Journal of Marketing*, 80 (4), 56–71.
- Gifford, Robert (2011), "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation," *American Psychologist*, 66 (4), 290–302.
- Gifford, Robert (2014), "Environmental Psychology Matters," *Annual Review of Psychology*, 65 (1), 541–79.
- Gifford, Robert and Andreas Nilsson (2014), "Personal and Social Factors that Influence Pro-environmental Concern and Behaviour: A Review," *International Journal of Psychology*, 49 (3), 141–57.
- Gilg, Andrew, Stewart Barr, and Nicholas Ford (2005), "Green Consumption or Sustainable Lifestyles? Identifying the Sustainable Consumer," *Futures*, 37 (6), 481–504.
- Gleim, Mark R., Jeffery S. Smith, Demetra Andrews, and J. Joseph Cronin Jr (2013), "Against the Green: A Multi-Method Examination of the Barriers to Green Consumption," *Journal of Retailing*, 89 (1), 44–61.
- Goldstein, Noah J., Robert B. Cialdini, and Vladas Griskevicius (2008), "A Room with a Viewpoint: Using Social Norms to

- Motivate Environmental Conservation in Hotels,” *Journal of Consumer Research*, 35 (3), 472–82.
- Gonzales, Marti Hope, Elliot Aronson, and Mark A. Costanzo (1988), “Using Social Cognition and Persuasion to Promote Energy Conservation: A Quasi-Experiment,” *Journal of Applied Social Psychology*, 18 (12), 1049–66.
- Granzin, Kent L. and Janeen E. Olsen (1991), “Characterizing Participants in Activities Protecting the Environment: A Focus on Donating, Recycling, and Conservation Behaviors,” *Journal of Public Policy & Marketing*, 10 (2), 1–27.
- Green, Todd and John Peloza (2014), “Finding the Right Shade of Green: The Effect of Advertising Appeal Type on Environmentally Friendly Consumption,” *Journal of Advertising*, 43 (2), 128–41.
- Grinstein, Amir and Udi Nisan (2009), “Demarketing, Minorities, and National Attachment,” *Journal of Marketing*, 73 (2), 105–22.
- Griskevicius, Vladas, Stephanie M. Cantú, and Mark van Vugt (2012), “The Evolutionary Bases for Sustainable Behavior: Implications for Marketing, Policy, and Social Entrepreneurship,” *Journal of Public Policy & Marketing*, 31 (1), 115–28.
- Griskevicius, Vladas, Joshua M. Tybur, and Bram van den Bergh (2010), “Going Green to Be Seen: Status, Reputation, and Conspicuous Conservation,” *Journal of Personality and Social Psychology*, 98 (3), 392–404.
- Grob, Alexander (1995), “A Structural Model of Environmental Attitudes and Behaviour,” *Journal of Environmental Psychology*, 15 (3), 209–20.
- Grolleau, Gilles, Lisette Ibanez, and Naoufel Mzoughi (2009), “Too Much of a Good Thing? Why Altruism Can Harm the Environment,” *Ecological Economics*, 68 (7), 2145–49.
- Gromet, Dena M., Howard Kunreuther, and Richard P. Larrick (2013), “Political Ideology Affects Energy-Efficiency Attitudes and Choices,” *Proceedings of the National Academy of Sciences*, 110 (23), 9314–19.
- Grunert, Klaus G., Sophie Hieke, and Josephine Wills (2014), “Sustainability Labels on Food Products: Consumer Motivation, Understanding, and Use,” *Food Policy*, 44, 177–89.
- Guagnano, Gregory A., Thomas Dietz, and Paul C. Stern (1994), “Willingness to Pay for Public Goods: A Test of the Contribution Model,” *Psychological Science*, 5 (6), 411–15.
- Guagnano, Gregory A., Paul C. Stern, and Thomas Dietz (1995), “Influences on Attitude–Behavior Relationships: A Natural Experiment with Curbside Recycling,” *Environment and Behavior*, 27 (5), 699–718.
- Gupta, Shruti and Denise T. Ogden (2009), “To Buy or Not to Buy? A Social Dilemma Perspective on Green Buying,” *Journal of Consumer Marketing*, 26 (6), 376–91.
- Guyader, Hugo, Mikael Ottosson, and Lars Witell (2017), “You Can’t Buy What You Can’t See: Retailer Practices to Increase the Green Premium,” *Journal of Retailing and Consumer Services*, 34, 319–25.
- Haidt, Jonathan (2003), “The Moral Emotions,” *Handbook of Affective Sciences*, 11 (2003), 852–70.
- Han, Tae-Im and Leslie Stoel (2017), “Explaining Socially Responsible Consumer Behavior: A Meta-Analytic Review of Theory of Planned Behavior,” *Journal of International Consumer Marketing*, 29 (2), 91–103.
- Handgraaf, Michel J. J., Margriet A. van Lidth de Jeude, and Kirstin C. Appelt (2013), “Public Praise vs. Private Pay: Effects of Rewards on Energy Conservation in the Workplace,” *Ecological Economics*, 86, 86–92.
- Hardcastle, Jessica Lyons (2013), “Nike, Starbucks: Climate Change Policy Is ‘Economic Opportunity,’” *Environmental Leader* (April 11), <https://www.environmentalleader.com/2013/04/nike-starbucks-climate-change-policy-is-economic-opportunity/>
- Hardisty, David J., Eric J. Johnson, and Elke U. Weber (2010), “A Dirty Word or a Dirty World? Attribute Framing, Political Affiliation, and Query Theory,” *Psychological Science*, 21 (1), 86–92.
- Hardisty, David J. and Elke U. Weber (2009), “Discounting Future Green: Money Versus the Environment,” *Journal of Experimental Psychology: General*, 138 (3), 329–40.
- Harland, Paul, Henk Staats, and Henk A.M. Wilke (1999), “Explaining Pro-environmental Intention and Behavior by Personal Norms and the Theory of Planned Behavior,” *Journal of Applied Social Psychology*, 29 (12), 2505–28.
- Hart, P. Sol and Erik C. Nisbet (2012), “Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies,” *Communication Research*, 39 (6), 701–23.
- Heath, Yuko and Robert Gifford (2002), “Extending the Theory of Planned Behavior: Predicting the Use of Public Transportation,” *Journal of Applied Social Psychology*, 32 (10), 2154–89.
- Hershfield, Hal E., Daniel G. Goldstein, William F. Sharpe, Jesse Fox, Leo Yeykelis, and Laura L. Carstensen, et al. (2011), “Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self,” *Journal of Marketing Research*, 48 (Special Issue), S23–S37.
- Hofstede, Geert (2001), *Culture’s Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. Thousand Oaks, CA: SAGE Publications.
- Holland, Rob W., Henk Aarts, and Daan Langendam (2006), “Breaking and Creating Habits on the Working Floor: A Field-Experiment on the Power of Implementation Intentions,” *Journal of Experimental Social Psychology*, 42 (6), 776–83.
- Hopkins, Michael S., Andrew Townend, Zayna Khayat, Balu Balagopal, Martin Reeves, and Maurice Berns (2009), “The Business of Sustainability: What It Means to Managers Now,” *MIT Sloan Management Review*, 51 (1), 20.
- Horne, Ralph E. (2009), “Limits to Labels: The Role of Eco-Labels in the Assessment of Product Sustainability and Routes to Sustainable Consumption,” *International Journal of Consumer Studies*, 33 (2), 175–82.
- Hughner, Renée Shaw, Pierre McDonagh, Andrea Prothero, Clifford J. Shultz, and Julie Stanton (2007), “Who Are Organic Food Consumers? A Compilation and Review of Why People Purchase Organic Food,” *Journal of Consumer Behavior*, 6 (2), 94–110.
- Hutton, R. Bruce and Dennis L. McNeill (1981), “The Value of Incentives in Stimulating Energy Conservation,” *Journal of Consumer Research*, 8 (3), 291–98.
- Iyer, Easwar S. and Rebecca Walker Reczek (2017), “The Intersection of Sustainability, Marketing, and Public Policy: Introduction to the Special Section on Sustainability,” *Journal of Public Policy & Marketing*, 36 (2), 246–54.

- Jachimowicz, Jon M., Oliver P. Hauser, Julia D. O'Brien, Erin Sherman, and Adam D. Galinsky (2018), "The Critical Role of Second-Order Normative Beliefs in Predicting Energy Conservation," *Nature Human Behaviour*, 2 (10), 757–64.
- Jansson, Johan, Agneta Marell, and Annika Nordlund (2010), "Green Consumer Behaviour: Determinants of Curtailment and Eco-Innovation Adoption," *Journal of Consumer Marketing*, 27 (4), 358–70.
- Jiménez, Marissa and Kenneth C. C. Yang (2008), "How Guilt Level Affects Green Advertising Effectiveness," *Journal of Creative Communications*, 3 (3), 231–54.
- Johnstone, Micael-Lee and Lay Tan (2015), "Exploring the Gap Between Consumers' Green Rhetoric and Purchasing Behaviour," *Journal of Business Ethics*, 132 (2), 311–28.
- Joireman, Jeffrey A., Terell P. Lasane, Jennifer Bennett, Diana Richards, and Salma Solaimani (2001), "Integrating Social Value Orientation and the Consideration of Future Consequences Within the Extended Norm Activation Model of Pro-environmental Behaviour," *British Journal of Social Psychology*, 40 (1), 133–55.
- Joireman, Jeffrey A., Paul A. M. van Lange, and Mark van Vugt (2004), "Who Cares About the Environmental Impact of Cars? Those with an Eye Toward the Future," *Environment and Behavior*, 36 (2), 187–206.
- Juhl, Hans Jørn, Morten H. J. Fenger, and John Thøgersen (2017), "Will the Consistent Organic Food Consumer Step Forward? An Empirical Analysis," *Journal of Consumer Research*, 44 (3), 519–35.
- Kahan, Dan M., Ellen Peters, Maggie Wittlin, Paul Slovic, Lisa Larrimore Ouellette, Donald Braman, et al. (2012), "The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks," *Nature Climate Change*, 2 (10), 732–35.
- Kahneman, Daniel (2003), "A Psychological Perspective on Economics," *American Economic Review*, 93 (2), 162–68.
- Kahneman, Daniel (2011), *Thinking, Fast and Slow*. New York: Farrar, Straus, and Giroux.
- Kaiser, Florian G. (2006), "A Moral Extension of the Theory of Planned Behavior: Norms and Anticipated Feelings of Regret in Conservationism," *Personality and Individual Differences*, 41 (1), 71–81.
- Kaiser, Florian G. and Todd A. Shimoda (1999), "Responsibility as a Predictor of Ecological Behaviour," *Journal of Environmental Psychology*, 19 (3), 243–53.
- Kallbekken, Steffen, Håakon Sælen, and Erlend A. T. Hermansen (2013), "Bridging the Energy Efficiency Gap: A Field Experiment on Lifetime Energy Costs and Household Appliances," *Journal of Consumer Policy*, 36 (1), 1–16.
- Kals, Elisabeth, Daniel Schumacher, and Leo Montada (1999), "Emotional Affinity Toward Nature as a Motivational Basis to Protect Nature," *Environment and Behavior*, 31 (2), 178–202.
- Karjalainen, Sami (2011), "Consumer Preferences for Feedback on Household Electricity Consumption," *Energy and Buildings*, 43 (2), 458–67.
- Karmarkar, Uma R. and Bryan Bollinger (2015), "BYOB: How Bringing Your Own Shopping Bags Leads to Treating Yourself and the Environment," *Journal of Marketing*, 79 (4), 1–15.
- Katzev, Richard D. and Theodore R. Johnson (1984), "Comparing the Effects of Monetary Incentives and Foot-in-the-Door Strategies in Promoting Residential Electricity Conservation," *Journal of Applied Social Psychology*, 14 (1), 12–27.
- Kidwell, Blair, Adam Farmer, and David M. Hardesty (2013), "Getting Liberals and Conservatives to Go Green: Political Ideology and Congruent Appeals," *Journal of Consumer Research*, 40 (2), 350–67.
- Kilbourne, William E. and Suzanne C. Beckmann (1998), "Review and Critical Assessment of Research on Marketing and the Environment," *Journal of Marketing Management*, 14 (6), 513–32.
- Kinnear, Thomas C., James R. Taylor, and Sadrudin A. Ahmed (1974), "Ecologically Concerned Consumers: Who Are They?" *Journal of Marketing*, 38 (2), 20–24.
- Kollmuss, Anja and Julian Agyeman (2002), "Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to Pro-environmental Behavior?" *Environmental Education Research*, 8 (3), 239–60.
- Kotler, Philip (2011), "Reinventing Marketing to Manage the Environmental Imperative," *Journal of Marketing*, 75 (4), 132–35.
- Kotler, Philip, Hermawan Kartajaya, and Iwan Setiawan (2010), *Marketing 3.0: From Products to Customers to the Human Spirit*. Hoboken, NJ: John Wiley & Sons.
- Kraft-Todd, Gordon T., Bryan Bollinger, Kenneth Gillingham, Stefan Lamp, and David G. Rand (2018), "Credibility-Enhancing Displays Promote the Provision of Non-normative Public Goods," *Nature*, 563, 245–48.
- Krause, Rachel M. (2009), "Developing Conditions for Environmentally Sustainable Consumption: Drawing Insight from Anti-smoking Policy," *International Journal of Consumer Studies*, 33 (3), 285–92.
- Kronrod, Ann, Amir Grinstein, and Luc Wathieu (2012), "Go Green! Should Environmental Messages Be So Assertive?" *Journal of Marketing*, 76 (1), 95–102.
- Kurz, Tim, Benjamin Gardner, Bas Verplanken, and Charles Abraham (2014), "Habitual Behaviors or Patterns of Practice? Explaining and Changing Repetitive Climate-Relevant Actions," *Wiley Interdisciplinary Reviews: Climate Change*, 6 (1), 113–28.
- Lanzini, Pietro and John Thøgersen (2014), "Behavioural Spillover in the Environmental Domain: An Intervention Study," *Journal of Environmental Psychology*, 40, 381–90.
- Laroche, Michel, Jasmin Bergeron, and Guido Barbaro-Forleo (2001), "Targeting Consumers Who Are Willing to Pay More for Environmentally Friendly Products," *Journal of Consumer Marketing*, 18 (6), 503–20.
- Lazarus, Richard J. (1994), "The Meaning and Promotion of Environmental Justice," *Maryland Journal of Contemporary Legal Issues*, 5 (1), 1–12.
- Lehman, Philip K. and E. Scott Geller (2004), "Behavior Analysis and Environmental Protection: Accomplishments and Potential for More," *Behavior and Social Issues*, 13 (1), 13–32.
- Leiserowitz, Anthony (2006), "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values," *Climatic Change*, 77 (1), 45–72.



- Leonard-Barton, Dorothy (1981), "Voluntary Simplicity Lifestyles and Energy Conservation," *Journal of Consumer Research*, 8 (3), 243–52.
- Lerner, Jennifer S. and Dacher Keltner (2000), "Beyond Valence: Toward a Model of Emotion-Specific Influences on Judgement and Choice," *Cognition & Emotion*, 14 (4), 473–93.
- Levine, Debra Siegel and Michael J. Strube (2012), "Environmental Attitudes, Knowledge, Intentions and Behaviors Among College Students," *The Journal of Social Psychology*, 152 (3), 308–26.
- Li, Shu-Chu Sarrina (2014), "Fear Appeals and College Students' Attitudes and Behavioral Intentions Toward Global Warming," *The Journal of Environmental Education*, 45 (4), 243–57.
- Li, Ye, Eric J. Johnson, and Lisa Zaval (2011), "Local Warming: Daily Temperature Change Influences Belief in Global Warming," *Psychological Science*, 22 (4), 454–59.
- Lin, Ying-Ching and Chiu-chi Angela Chang (2012), "Double Standard: The Role of Environmental Consciousness in Green Product Usage," *Journal of Marketing*, 76 (5), 125–34.
- Lokhorst, Anne Marike, Carol Werner, Henk Staats, Eric van Dijk, and Jeff L. Gale (2013), "Commitment and Behaviour Change: A Meta-Analysis and Critical Review of Commitment-Making Strategies in Environmental Research," *Environment and Behaviour*, 45 (1), 3–34.
- Lovelock, Christopher H. (1983), "Classifying Services to Gain Strategic Marketing Insights," *Journal of Marketing*, 47 (3), 9–20.
- Lowe, Thomas, Katrina Brown, Suraje Dessai, Miguel de França Doria, Kat Haynes, and Katharine Vincent (2006), "Does Tomorrow Ever Come? Disaster Narrative and Public Perceptions of Climate Change," *Public Understanding of Science*, 15 (4), 435–57.
- Luchs, Michael G., Jacob Brower, and Ravindra Chitturi (2012), "Product Choice and the Importance of Aesthetic Design Given the Emotion-Laden Trade-Off Between Sustainability and Functional Performance," *Journal of Product Innovation Management*, 29 (6), 903–16.
- Luchs, Michael G. and Minu Kumar (2017), "Yes, but This Other One Looks Better/Works Better:" How Do Consumers Respond to Trade-Offs Between Sustainability and Other Valued Attributes?" *Journal of Business Ethics*, 140 (3), 567–84.
- Luchs, Michael G. and Todd A. Mooradian (2012), "Sex, Personality, and Sustainable Consumer Behaviour: Elucidating the Gender Effect," *Journal of Consumer Policy*, 35 (1), 127–44.
- Luchs, Michael G., Rebecca Walker Naylor, Julie R. Irwin, and Rajagopal Raghunathan (2010), "The Sustainability Liability: Potential Negative Effects of Ethicality on Product Preference," *Journal of Marketing*, 74 (5), 18–31.
- Ludwig, Timothy D., Timothy W. Gray, and Allison Rowell (1998), "Increasing Recycling in Academic Buildings: A Systematic Replication," *Journal of Applied Behavior Analysis*, 31 (4), 683–86.
- Luo, Xueming and Chitra Bhanu Bhattacharya (2006), "Corporate Social Responsibility, Customer Satisfaction, and Market Value," *Journal of Marketing*, 70 (4), 1–18.
- Mainieri, Tina, Elaine G. Barnett, Trisha R. Valdero, John B. Unipan, and Stuart Oskamp (1997), "Green Buying: The Influence of Environmental Concern on Consumer Behavior," *The Journal of Social Psychology*, 137 (2), 189–204.
- Mallett, Robyn K. (2012), "Eco-Guilt Motivates Eco-Friendly Behavior," *Ecopsychology*, 4 (3), 223–31.
- Mallett, Robyn K., Kala J. Melchiori, and Theresa Strickroth (2013), "Self-Confrontation via a Carbon Footprint Calculator Increases Guilt and Support for a Pro-environmental Group," *Ecopsychology*, 5 (1), 9–16.
- Maner, Jon K., Carol L. Luce, Steven L. Neuberg, Robert B. Cialdini, Stephanie Brown, and Brad J. Sagarin (2002), "The Effects of Perspective Taking on Motivations for Helping: Still No Evidence for Altruism," *Personality and Social Psychology Bulletin*, 28 (11), 1601–10.
- Manget, Joe, Catherine Roche, and Felix Münnich (2009), "Capturing the Green Advantage for Consumer Companies," research report, The Boston Consulting Group (January).
- Mannetti, Lucia, Antonio Pierro, and Stefano Livi (2004), "Recycling: Planned and Self-Expressive Behavior," *Journal of Environmental Psychology*, 24 (2), 227–36.
- Markus, Hazel R. and Shinobu Kitayama (1991), "Cultural Variation in the Self-Concept," in *The Self: Interdisciplinary Approaches*, Jaine Strauss and George R. Goethals, eds. New York: Springer, 18–48.
- Marx, Sabine M., Elke U. Weber, Benjamin S. Orlove, Anthony Leiserowitz, David H. Krantz, Carla Roncoli, et al. (2007), "Communication and Mental Processes: Experiential and Analytic Processing of Uncertain Climate Information," *Global Environmental Change*, 17 (1), 47–58.
- Mazar, Nina and Chen-Bo Zhong (2010), "Do Green Products Make Us Better People?" *Psychological Science*, 21 (4), 494–98.
- McDonald, Seonaidh, Caroline J. Oates, C. William Young, and Kumju Hwang (2006), "Toward Sustainable Consumption: Researching Voluntary Simplifiers," *Psychology & Marketing*, 23 (6), 515–34.
- McDonough, William and Michael Braungart (2002), "Design for the Triple Top Line: New Tools for Sustainable Commerce," *Corporate Environmental Strategy*, 9 (3), 251–58.
- McKenzie-Mohr, Doug (2000), "New Ways to Promote Pro-environmental Behavior: Promoting Sustainable Behavior: An Introduction to Community-Based Social Marketing," *Journal of Social Issues*, 56 (3), 543–54.
- McKenzie-Mohr, Doug (2011), *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. Gabriola Island: New Society.
- Meng, Matthew D. and Remi Trudel (2017), "Using Emoticons to Encourage Students to Recycle," *The Journal of Environmental Education*, 48 (3), 196–204.
- Menon, Ajay and Anil Menon (1997), "Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy," *The Journal of Marketing*, 61 (1), 51–67.
- Mick, David G. (2006), "Meaning and Mattering Through Transformative Consumer Research," *Advances in Consumer Research*, 33 (1), 1–4.
- Min, Jihoon, Inês L. Azevedo, Jeremy Michalek, and Wändi Bruine de Bruin (2014), "Labeling Energy Cost on Light Bulbs Lowers Implicit Discount Rates," *Ecological Economics*, 97 (C), 42–50.

- Minson, Julia A. and Benoît Monin (2012), "Do-Gooder Derogation: Disparaging Morally Motivated Minorities to Defuse Anticipated Reproach," *Social Psychological and Personality Science*, 3 (2), 200–207.
- Mont, Oksana and Eva Heiskanen (2015), "Breaking the Stalemate of Sustainable Consumption with Industrial Ecology and a Circular Economy," in *Handbook of Research on Sustainable Consumption*, L. Reisch and J. Thøgersen, eds. Cheltenham, UK: Edward Elgar, 33–47.
- Muralidharan, Sidharth and Kim Sheehan (2018), "The Role of Guilt in Influencing Sustainable Pro-environmental Behaviors Among Shoppers: Differences in Response by Gender to Messaging About England's Plastic Bag Levy," *Journal of Advertising Research*, 58 (3), 349–62.
- Muraven, Mark and Roy F. Baumeister (2000), "Self-Regulation and Depletion of Limited Resources: Does Self-Control Resemble a Muscle?" *Psychological Bulletin*, 126 (2), 247–59.
- Murphy, Patrick E., Norman Kangun, and William B. Locander (1978), "Environmentally Concerned Consumers-Racial Variations: Are Middle and Upper-Class Black Females as Ecologically Conscious as Their White Counterparts?" *Journal of Marketing*, 42 (4), 61–66.
- Murtagh, Niamh, Birgitta Gatersleben, Laura Cowen, and David Uzzell (2015), "Does Perception of Automation Undermine Pro-environmental Behaviour? Findings from Three Everyday Settings," *Journal of Environmental Psychology*, 42 (Suppl C), 139–48.
- Myers, Teresa A., Matthew C. Nisbet, Edward W. Maibach, and Anthony A. Leiserowitz (2012), "A Public Health Frame Arouses Hopeful Emotions About Climate Change," *Climatic Change*, 113 (3/4), 1105–12.
- Neumann, Bruce R., Michael L. Roberts, and Eric Cauvin (2012), "Management Control Systems Dilemma: Reconciling Sustainability with Information Overload," in *Advances in Management Accounting*, Marc J. Epstein and John Y. Lee, eds. Bingley, UK: Emerald Group, 1–28.
- Newman, George E., Margarita Gorlin, and Ravi Dhar (2014), "When Going Green Backfires: How Firm Intentions Shape the Evaluation of Socially Beneficial Product Enhancements," *Journal of Consumer Research*, 41 (3), 823–39.
- Nielsen (2015), "Consumer Goods' Brands That Demonstrate Commitment to Sustainability Outperform Those That Don't" (accessed January 7, 2018), <http://www.nielsen.com/ca/en/press-room/2015/consumer-goods-brands-that-demonstrate-commitment-to-sustainability-outperform.html>.
- Nisbet, Elizabeth K., John M. Zelenski, and Steven A. Murphy (2009), "The Nature Relatedness Scale: Linking Individuals' Connection with Nature to Environmental Concern and Behavior," *Environment and Behavior*, 41 (5), 715–40.
- Nolan, Jessica M., P. Wesley Schultz, Robert B. Cialdini, Noah J. Goldstein, and Vidas Griskevicius (2008), "Normative Social Influence Is Underdetected," *Personality and Social Psychology Bulletin*, 34 (7), 913–23.
- Norman, Wayne and Chris MacDonald (2004), "Getting to the Bottom of 'Triple Bottom Line,'" *Business Ethics Quarterly*, 14 (2), 243–62.
- OECD and WHO (2015), *Promoting Health, Preventing Disease: The Economic Case*. Paris: OECD.
- Ölander, Folke and John Thøgersen (2014), "Informing Versus Nudging in Environmental Policy," *Journal of Consumer Policy*, 37 (3), 341–56.
- Olsen, Mitchell C., Rebecca J. Slotegraaf, and Sandeep R. Chandukala (2014), "Green Claims and Message Frames: How Green New Products Change Brand Attitude," *Journal of Marketing*, 78 (5), 119–37.
- Olson, Jenny G., Brent McFerran, Andrea C. Morales, and Darren W. Dahl (2016), "Wealth and Welfare: Divergent Moral Reactions to Ethical Consumer Choices," *Journal of Consumer Research*, 42 (6), 879–96.
- O'Neill, Saffron and Sophie Nicholson-Cole (2009), "'Fear Won't Do It': Promoting Positive Engagement with Climate Change Through Visual and Iconic Representations," *Science Communication*, 30 (3), 355–79.
- Onwezen, Marleen C., Gerrit Antonides, and Jos Bartels (2013), "The Norm Activation Model: An Exploration of the Functions of Anticipated Pride and Guilt in Pro-environmental Behaviour," *Journal of Economic Psychology*, 39, 141–53.
- Ormans, Laurent (2016), "50 Journals Used in FT Research Rank," *Financial Times* (September 12), <https://www.ft.com/content/3405a512-5cbb-11e1-8f1f-00144feabdc0>.
- Osbaldeston, Richard and John Paul Schott (2012), "Environmental Sustainability and Behavioral Science: Meta-Analysis of Pro-environmental Behavior Experiments," *Environment and Behavior*, 44 (2), 257–99.
- Osbaldeston, Richard and Kennon M. Sheldon (2002), "Social Dilemmas and Sustainability: Promoting Peoples' Motivation to 'Cooperate with the Future,'" in *Psychology of Sustainable Development*, Peter Schmuck and Wesley P. Schultz, eds. New York: Springer Science & Business Media, 37–58.
- Oskamp, Stuart, Maura J. Harrington, Todd C. Edwards, Deborah L. Sherwood, Shawn M. Okuda, and Deborah C. Swanson (1991), "Factors Influencing Household Recycling Behavior," *Environment and Behavior*, 23 (4), 494–519.
- Osterhus, Thomas L. (1997), "Pro-social Consumer Influence Strategies: When and How Do They Work?" *Journal of Marketing*, 61 (4), 16–29.
- Paavola, Jouni (2001), "Towards Sustainable Consumption: Economics and Ethical Concerns for the Environment in Consumer Choices," *Review of Social Economy*, 59 (2), 227–48.
- Panno, Angelo, Mauro Giacomantonio, Giuseppe Carrus, Fridanna Maricchiolo, Sabine Pirchio, and Lucia Mannetti (2018), "Mindfulness, Pro-environmental Behavior, and Belief in Climate Change: The Mediating Role of Social Dominance," *Environment and Behavior*, 50 (8), 864–88.
- Parguel, Béatrice, Florence Benoît-Moreau, and Fabrice Larceneux (2011), "How Sustainability Ratings Might Deter 'Greenwashing': A Closer Look at Ethical Corporate Communication," *Journal of Business Ethics*, 102 (1), 15.
- Paswan, Audhesh, Francisco Guzmán, and Jeffrey Lewin (2017), "Attitudinal Determinants of Environmentally Sustainable Behavior," *Journal of Consumer Marketing*, 34 (5), 414–26.

- Paul, Justin, Ashwin Modi, and Jayesh Patel (2016), "Predicting Green Product Consumption Using Theory of Planned Behavior and Reasoned Action," *Journal of Retailing and Consumer Services*, 29, 123–34.
- Peattie, Ken (1999), "Trappings Versus Substance in the Greening of Marketing Planning," *Journal of Strategic Marketing*, 7 (2), 131–48.
- Peattie, Ken (2001), "Golden Goose or Wild Goose? The Hunt for the Green Consumer," *Business Strategy and the Environment*, 10 (4), 187–99.
- Peattie, Ken (2010), "Green Consumption: Behavior and Norms," *Annual Review of Environment and Resources*, 35 (1), 195–28.
- Peattie, Ken and Sue Peattie (2009), "Social Marketing: A Pathway to Consumption Reduction?" *Journal of Business Research*, 62 (2), 260–68.
- Pelozo, John, Katherine White, and Jingzhi Shang (2013), "Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes," *Journal of Marketing*, 77 (1), 104–19.
- Peter, Paula C. and Heather Honea (2012), "Targeting Social Messages with Emotions of Change: The Call for Optimism," *Journal of Public Policy & Marketing*, 31 (2), 269–83.
- Phipps, Marcus, Lucie K. Ozanne, Michael G. Luchs, Saroja Subrahmanyam, Sommer Kapitan, Jesse R. Catlin, et al. (2013), "Understanding the Inherent Complexity of Sustainable Consumption: A Social Cognitive Framework," *Journal of Business Research*, 66 (8), 1227–34.
- Pichert, Daniel and Konstantinos V. Katsikopoulos (2008), "Green Defaults: Information Presentation and Pro-environmental Behaviour," *Journal of Environmental Psychology*, 28 (1), 63–73.
- Pickett-Baker, Josephine and Ritsuko Ozaki (2008), "Pro-environmental Products: Marketing Influence on Consumer Purchase Decision," *Journal of Consumer Marketing*, 25 (5), 281–93.
- Piff, Paul K., Matthew Feinberg, Pia Dietze, Daniel M. Stancato, and Dacher Keltner (2015), "Awe, the Small Self, and Prosocial Behavior," *Journal of Personality & Social Psychology*, 108 (6), 883–99.
- Price, Linda L., Robin A. Coulter, Yuliya Strizhakova, and Ainslie Schultz (2017), "The Fresh Start Mindset: Transforming Consumers' Lives," *Journal of Consumer Research*, 45 (1), 21–48.
- Prooijen, Anne-Marie and Paul Sparks (2014), "Attenuating Initial Beliefs: Increasing the Acceptance of Anthropogenic Climate Change Information by Reflecting on Values," *Risk Analysis*, 34 (5), 929–36.
- Prothero, Andrea, Susan Dobscha, Jim Freund, William E. Kilbourne, Michael G. Luchs, Lucie K. Ozanne, et al. (2011), "Sustainable Consumption: Opportunities for Consumer Research and Public Policy," *Journal of Public Policy & Marketing*, 30 (1), 31–38.
- Rabinovich, Anna, Thomas A. Morton, Tom Postmes, and Bas Verplanken (2012), "Collective Self and Individual Choice: The Effects of Inter-group Comparative Context on Environmental Values and Behaviour," *British Journal of Social Psychology*, 51 (4), 551–69.
- Reczek, Rebecca, Remi Trudel, and Katherine White (2018), "Focusing on the Forest or the Trees: How Abstract Versus Concrete Construal Level Predicts Responses to Eco-Friendly Products," *Journal of Environmental Psychology*, 57, 87–98.
- Reed, Americus and Karl F. Aquino (2003), "Moral Identity and the Expanding Circle of Moral Regard Toward Out-Groups," *Journal of Personality and Social Psychology*, 84 (6), 1270–86.
- Reed, Americus, Karl Aquino, and Eric Levy (2007), "Moral Identity and Judgments of Charitable Behaviors," *Journal of Marketing*, 71 (1), 178–93.
- Rees, Jonas H., Sabine Klug, and Sebastian Bamberg (2014), "Guilty Conscience: Motivating Pro-environmental Behavior by Inducing Negative Moral Emotions," *Climatic Change*, 130 (3), 439–52.
- Reno, Raymond R., Robert B. Cialdini, and Carl A. Kallgren (1993), "The Transsituational Influence of Social Norms," *Journal of Personality and Social Psychology*, 64 (1), 104–12.
- Rezvani, Zeinab, Johan Jansson, and Maria Bengtsson (2017), "Cause I'll Feel Good! An Investigation into the Effects of Anticipated Emotions and Personal Moral Norms on Consumer Pro-environmental Behavior," *Journal of Promotion Management*, 23 (1), 163–83.
- Richardson, Alan (1977), "Verbalizer–Visualizer: A Cognitive Style Dimension," *Journal of Mental Imagery*, 1 (1), 109–25.
- Ripple, William J., Christopher Wolf, Thomas M. Newsome, Mauro Galetti, Mohammed Alamgir, Eileen Crist, et al. (2017), "World Scientists' Warning to Humanity: A Second Notice," *BioScience*, 67 (12), 1026–28.
- Roberts, James A. (1993), "Sex Differences in Socially Responsible Consumers' Behavior," *Psychological Reports*, 73 (1), 139–48.
- Sachdeva, Sonya, Jennifer Jordan, and Nina Mazar (2015), "Green Consumerism: Moral Motivations to a Sustainable Future," *Current Opinion in Psychology*, 6, 60–65.
- Sadalla, Edward K. and Jennifer L. Krull (1995), "Self-Presentational Barriers to Resource Conservation," *Environment and Behavior*, 27 (3), 328–53.
- Savitz, Andrew and Karl Weber (2013), *The Triple Bottom Line: How Today's Best-Run Companies Are Achieving Economic, Social, and Environmental Success—and How You Can Too*. San Francisco, CA: John Wiley & Sons.
- Scannell, Leila and Robert Gifford (2013), "Personally Relevant Climate Change: The Role of Place Attachment and Local Versus Global Message Framing in Engagement," *Environment and Behavior*, 45 (1), 60–85.
- Schkade, David A. and John W. Payne (1994), "How People Respond to Contingent Valuation Questions: A Verbal Protocol Analysis of Willingness to Pay for an Environmental Regulation," *Journal of Environmental Economics and Management*, 26 (1), 88–109.
- Schuitema, Geertje and Judith I.M. de Groot (2015), "Green Consumerism: The Influence of Product Attributes and Values on Purchasing Intentions," *Journal of Consumer Behaviour*, 14 (1), 57–69.
- Schuldt, Jonathon P. and Norbert Schwarz (2010), "The 'Organic' Path to Obesity? Organic Claims Influence Calorie Judgments and Exercise Recommendations," *Judgment and Decision Making*, 5 (3), 144–50.
- Schultz, P. Wesley (1999), "Changing Behavior with Normative Feedback Interventions: A Field Experiment on Curbside Recycling," *Basic and Applied Social Psychology*, 21 (1), 25–36.

- Schultz, P. Wesley (2014), "Strategies for Promoting Pro-environmental Behavior," *European Psychologist*, 19 (2), 107–17.
- Schultz, P. Wesley, Jessica M. Nolan, Robert B. Cialdini, Noah J. Goldstein, and Vidas Griskevicius (2007), "The Constructive, Destructive, and Reconstructive Power of Social Norms," *Psychological Science*, 18 (5), 429–34.
- Schultz, P. Wesley, Stuart Oskamp, and Tina Mainieri (1995), "Who Recycles and When? A Review of Personal and Situational Factors," *Journal of Environmental Psychology*, 15 (2), 105–21.
- Schultz, Tracy and Kelly Fielding (2014), "The Common In-Group Identity Model Enhances Communication About Recycled Water," *Journal of Environmental Psychology*, 40, 296–305.
- Schwartz, Daniel, Wändi Bruine de Bruin, Baruch Fischhoff, and Lester Lave (2015), "Advertising Energy Saving Programs: The Potential Environmental Cost of Emphasizing Monetary Savings," *Journal of Experimental Psychology: Applied*, 21 (2), 158–66.
- Schwartz, Daniel and George Loewenstein (2017), "The Chill of the Moment: Emotions and Pro-environmental Behavior," *Journal of Public Policy & Marketing*, 36 (2), 255–68.
- Schwartz, Shalom H. (1977), "Normative Influences on Altruism," *Advances in Experimental Social Psychology*, 10, 221–79.
- Schwepeker, Charles H. and T. Bettina Cornwell (1991), "An Examination of Ecologically Concerned Consumers and Their Intention to Purchase Ecologically Packaged Products," *Journal of Public Policy & Marketing*, 10 (2), 77–101.
- Semenza, Jan C., David E. Hall, Daniel J. Wilson, Brian D. Bontempo, David J. Sailor, and Linda A. George (2008), "Public Perception of Climate Change: Voluntary Mitigation and Barriers to Behavior Change," *American Journal of Preventive Medicine*, 35 (5), 479–87.
- Sen, Sankar and Chitra Bhanu Bhattacharya (2001), "Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social Responsibility," *Journal of Marketing Research*, 38 (2), 225–43.
- Sevillano, Verónica, Juan I. Aragonés, and P. Wesley Schultz (2007), "Perspective Taking, Environmental Concern, and the Moderating Role of Dispositional Empathy," *Environment and Behavior*, 39 (5), 685–705.
- Shang, Jingzhi and John Peloza (2016), "Can 'Real' Men Consume Ethically? How Ethical Consumption Leads to Unintended Observer Inference," *Journal of Business Ethics*, 139 (1), 129–45.
- Sheth, Jagdish N., Nirmal K. Sethia, and Shanthi Srinivas (2011), "Mindful Consumption: A Customer-Centric Approach to Sustainability," *Journal of the Academy of Marketing Science*, 39 (1), 21–39.
- Shiv, Baba and Alexander Fedorikhin (1999), "Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research*, 26 (3), 278–92.
- Siero, Frans W., Arnold B. Bakker, Gerda B. Dekker, and Marcel T.C. van den Burg (1996), "Changing Organizational Energy Consumption Behaviour Through Comparative Feedback," *Journal of Environmental Psychology*, 16 (3), 235–46.
- Slavin, Robert E., John S. Wodarski, and Bernard L. Blackburn (1981), "A Group Contingency for Electricity Conservation in Master-Metered Apartments," *Journal of Applied Behavior Analysis*, 14 (3), 357–63.
- Small, Kenneth A. and Kurt Van Dender (2007), "Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect," *The Energy Journal*, 28 (1), 25–51.
- Smith, Nicholas and Anthony Leiserowitz (2014), "The Role of Emotion in Global Warming Policy Support and Opposition," *Risk Analysis*, 34 (5), 937–48.
- Snappy Living (2011), "Use Cold Water for Laundry," (accessed June 18, 2018), <https://snappyliving.com/cold-water-for-laundry/>.
- Solomon, Michael R., Katherine White, and Dahren William Dahl (2017), *Consumer Behavior: Buying, Having, and Being*. Boston, MA: Pearson.
- Sorrell, Steve, John Dimitropoulos, and Matt Sommerville (2009), "Empirical Estimates of the Direct Rebound Effect: A Review," *Energy Policy*, 37 (4), 1356–71.
- Sparks, Paul, Donna C. Jessop, James Chapman, and Katherine Holmes (2010), "Pro-environmental Actions, Climate Change, and Defensiveness: Do Self-Affirmations Make a Difference to People's Motives and Beliefs About Making a Difference?" *British Journal of Social Psychology*, 49 (3), 553–68.
- Spence, Alexa, Wouter Poortinga, and Nick Pidgeon (2012), "The Psychological Distance of Climate Change," *Risk Analysis*, 32 (6), 957–72.
- Steenhaut, Sarah and Patrick van Kenhove (2006), "The Mediating Role of Anticipated Guilt in Consumers' Ethical Decision Making," *Journal of Business Ethics*, 69 (3), 269–88.
- Steg, Linda (2005), "Car Use: Lust and Must. Instrumental, Symbolic and Affective Motives for Car Use," *Transportation Research Part A: Policy and Practice*, 39 (2), 147–62.
- Steg, Linda (2015), "Environmental Psychology and Sustainable Consumption," in *Handbook of Research in Sustainable Consumption*, L. Reisch and J. Thøgersen, eds. Cheltenham, England: Edward Elgar, 70–83.
- Steg, Linda, Jan Willem Bolderdijk, Kees Keizer, and Goda Perlaviciute (2014), "An Integrated Framework for Encouraging Pro-environmental Behaviour: The Role of Values, Situational Factors and Goals," *Journal of Environmental Psychology*, 38, 104–15.
- Steg, Linda and Charles Vlek (2009), "Encouraging Pro-environmental Behaviour: An Integrative Review and Research Agenda," *Journal of Environmental Psychology*, 29 (3), 309–17.
- Stern, Paul C. (1999), "Information, Incentives, and Pro-environmental Consumer Behavior," *Journal of Consumer Policy*, 22 (4), 461–78.
- Stern, Paul C. (2000), "New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior," *Journal of Social Issues*, 56 (3), 407–24.
- Stern, Paul C. (2011), "Contributions of Psychology to Limiting Climate Change," *American Psychologist*, 66 (4), 303–14.
- Stern, Paul C. and Thomas Dietz (1994), "The Value Basis of Environmental Concern," *Journal of Social Issues*, 50 (3), 65–84.
- Stern, Paul C., Thomas Dietz, and Linda Kalof (1993), "Value Orientations, Gender, and Environmental Concern," *Environment and Behavior*, 25 (5), 322–48.
- Strathman, Alan, Faith Gleicher, David S. Boninger, and C. Scott Edwards (1994), "The Consideration of Future Consequences:

- Weighing Immediate and Distant Outcomes of Behavior,” *Journal of Personality and Social Psychology*, 66 (4), 742–52.
- Strother, J. B. and Z. Fazal (2011), “Can Green Fatigue Hamper Sustainability Communication Efforts?” in *2011 IEEE International Professional Communication Conference*, Cincinnati, OH (October 17–19, 2011), 1–6.
- Sullivan, Gavin Brent (2015), “Collective Emotions,” *Social and Personality Psychology Compass*, 9 (8), 383–93.
- Sun, Monic and Remi Trudel (2017), “The Effect of Recycling Versus Trashing on Consumption: Theory and Experimental Evidence,” *Journal of Marketing Research*, 54 (2), 293–305.
- Sussman, Abigail B. and Rourke L. O’Brien (2016), *Knowing When to Spend: Unintended Financial Consequences of Ear-marking to Encourage Savings*. Chicago, IL: American Marketing Association.
- Swim, Janet K., Susan Clayton, and George S. Howard (2011), “Human Behavioral Contributions to Climate Change: Psychological and Contextual Drivers,” *American Psychologist*, 66 (4), 251–64.
- Tajfel, Henri and John C. Turner (1986), *The Social Identity Theory of Intergroup Behaviour*. Chicago, IL: Nelson-Hall.
- Taufique, Khan Md Raziuddin, Andrea Vocino, and Michael Jay Polonsky (2017), “The Influence of Eco-Label Knowledge and Trust on Pro-environmental Consumer Behaviour in an Emerging Market,” *Journal of Strategic Marketing*, 25 (7), 511–29.
- Teng, Yi-Man, Kun-Shan Wu, and Hsiao-Hui Liu (2015), “Integrating Altruism and the Theory of Planned Behavior to Predict Patronage Intention of a Green Hotel,” *Journal of Hospitality & Tourism Research*, 39 (3), 299–315.
- Theotokis, Aristeidis and Emmanouela Manganari (2015), “The Impact of Choice Architecture on Sustainable Consumer Behavior: The Role of Guilt,” *Journal of Business Ethics*, 131 (2), 423–37.
- Thøgersen, John (2000), “Psychological Determinants of Paying Attention to Eco-Labels in Purchase Decisions: Model Development and Multinational Validation,” *Journal of Consumer Policy*, 23 (3), 285–313.
- Tiefenbeck, Verena, Lorenz Goette, Kathrin Degen, Vojkan Tasic, Elgar Fleisch, Rafael Lalive, et al. (2016), “Overcoming Salience Bias: How Real-Time Feedback Fosters Resource Conservation,” *Management Science*, 64 (3), 1458–76.
- Tiefenbeck, Verena, Thorsten Staake, Kurt Roth, and Olga Sachs (2013), “For Better or for Worse? Empirical Evidence of Moral Licensing in a Behavioral Energy Conservation Campaign,” *Energy Policy*, 57, 160–71.
- Trudel, Remi, Jennifer J. Argo, and Matthew D. Meng (2016), “The Recycled Self: Consumers’ Disposal Decisions of Identity-Linked Products,” *Journal of Consumer Research*, 43 (2), 246–64.
- Trudel, Remi and June Cotte (2009), “Does It Pay to Be Good?” *MIT Sloan Management Review*, 50 (2), 61.
- Truelove, Heather Barnes, Amanda R. Carrico, Elke U. Weber, Kaitlin Toner Raimi, and Michael P. Vandenbergh (2014), “Positive and Negative Spillover of Pro-environmental Behavior: An Integrative Review and Theoretical Framework,” *Global Environmental Change*, 29, 127–38.
- Ungemach, Christoph, Adrian R. Camilleri, Eric J. Johnson, Richard P. Larrick, and Elke U. Weber (2018), “Translated Attributes as Choice Architecture: Aligning Objectives and Choices Through Decision Signposts,” *Management Science*, 64 (5), 2445–59.
- Van Boven, Leaf (2005), “Experientialism, Materialism, and the Pursuit of Happiness,” *Review of General Psychology*, 9 (2), 132–42.
- Van Boven, Leaf, Joanne Kane, A. Peter McGraw, and Jeannette Dale (2010), “Feeling Close: Emotional Intensity Reduces Perceived Psychological Distance,” *Journal of Personality and Social Psychology*, 98 (6), 872–75.
- Van der, Weiden, Anouk, Henk Aarts, and Kirsten Ruys (2013), “On the Nature of Experiencing Self-Agency: The Role of Goals and Primes in Inferring Oneself as the Cause of Behavior,” *Social and Personality Psychology Compass*, 7 (12), 888–904.
- Van der, Werff, Ellen, Linda Steg, and Kees Keizer (2013), “The Value of Environmental Self-Identity: The Relationship Between Biospheric Values, Environmental Self-Identity, and Environmental Preferences, Intentions, and Behaviour,” *Journal of Environmental Psychology*, 34, 55–63.
- Van der, Werff, Ellen, Linda Steg, and Kees Keizer (2014), “I Am What I Am, by Looking Past the Present: The Influence of Biospheric Values and Past Behavior on Environmental Self-Identity,” *Environment and Behavior*, 46 (5), 626–57.
- Van Houten, Ron, Paul A. Nau, and Michael Merrigan (1981), “Reducing Elevator Energy Use: A Comparison of Posted Feedback and Reduced Elevator Convenience,” *Journal of Applied Behavior Analysis*, 14 (4), 377–87.
- Vargo, Stephen L. and Robert F. Lusch (2004), “Evolving to a New Dominant Logic for Marketing,” *Journal of Marketing*, 68 (1), 1–17.
- Velasquez, Alcides and Robert LaRose (2015), “Youth Collective Activism Through Social Media: The Role of Collective Efficacy,” *New Media & Society*, 17 (6), 899–18.
- Verhaert, Griet A. and Dirk van den Poel (2011), “Empathy as Added Value in Predicting Donation Behavior,” *Journal of Business Research*, 64 (12), 1288–95.
- Verplanken, Bas (2011), “Old Habits and New Routes to Sustainable Behaviour,” in *Engaging the Public with Climate Change: Behaviour Change and Communication*, L. Whitmarsh, S. O’Neill, and I. Lorenzoni, eds. Milton Park, England: Taylor and Francis, 17–30.
- Verplanken, Bas and Rob W. Holland (2002), “Motivated Decision Making: Effects of Activation and Self-Centrality of Values on Choices and Behavior,” *Journal of Personality and Social Psychology*, 82 (3), 434–47.
- Verplanken, Bas and Deborah Roy (2016), “Empowering Interventions to Promote Sustainable Lifestyles: Testing the Habit Discontinuity Hypothesis in a Field Experiment,” *Journal of Environmental Psychology*, 45 (Suppl C), 127–34.
- Verplanken, Bas, Ian Walker, Adrian Davis, and Michaela Jurasek (2008), “Context Change and Travel Mode Choice: Combining the Habit Discontinuity and Self-Activation Hypotheses,” *Journal of Environmental Psychology*, 28 (2), 121–27.
- Vugt, Mark, Vladas Griskevicius, and P. Schultz (2014), “Naturally Green: Harnessing Stone Age Psychological Biases to Foster Environmental Behavior,” *Social Issues and Policy Review*, 8 (1), 1–32.
- Wade-Benzoni, Kimberly A., A.E. Tenbrunsel, and M.H. Bazerman (1997), “Egocentric Interpretations of Fairness as an Obstacle to the Resolution of Environmental Conflict,” in *Research on*

- Negotiation in Organizations: A Biannual Research Series*, Vol. 6, Roy J. Lewicki and B. H. Sheppard, eds. Bingley, UK: Emerald Group Publishing, 189–208.
- Walker, Ian, Gregory O. Thomas, and Bas Verplanken (2015), “Old Habits Die Hard: Travel Habit Formation and Decay During an Office Relocation,” *Environment and Behavior*, 47 (10), 1089–106.
- Wang, Tingting, Anirban Mukhopadhyay, and Vanessa M. Patrick (2017), “Getting Consumers to Recycle NOW! When and Why Cuteness Appeals Influence Prosocial and Sustainable Behavior,” *Journal of Public Policy & Marketing*, 36 (2), 269–83.
- Wang, Wenbo, Aradhna Krishna, and Brent McFerran (2016), “Turning Off the Lights: Consumers’ Environmental Efforts Depend on Visible Efforts of Firms,” *Journal of Marketing Research*, 54 (3), 478–94.
- Waugh, Christian E. and Barbara L. Fredrickson (2006), “Nice to Know You: Positive Emotions, Self–Other Overlap, and Complex Understanding in the Formation of a New Relationship,” *The Journal of Positive Psychology*, 1 (2), 93–106.
- Weber, Elke U. (2010), “What Shapes Perceptions of Climate Change?” *Wiley Interdisciplinary Reviews: Climate Change*, 1 (3), 332–42.
- Weber, Elke U. (2016), “What Shapes Perceptions of Climate Change? New Research Since 2010,” *Wiley Interdisciplinary Review Climate Change*, 7(1), 125–34.
- Welsch, Heinz and Jan Kühling (2009), “Determinants of Pro-environmental Consumption: The Role of Reference Groups and Routine Behavior,” *Ecological Economics*, 69 (1), 166–76.
- Werner, Carol M., Mark U. Rhodes, and Kimberly K. Partain (1998), “Designing Effective Instructional Signs with Schema Theory: Case Studies of Polystyrene Recycling,” *Environment and Behavior*, 30 (5), 709–35.
- White, Katherine and Jennifer J. Argo (2011), “When Imitation Doesn’t Flatter: The Role of Consumer Distinctiveness in Responses to Mimicry,” *Journal of Consumer Research*, 38 (4), 667–80.
- White, Katherine, Jennifer J. Argo, and Jaideep Sengupta (2012), “Dissociative Versus Associative Responses to Social Identity Threat: The Role of Consumer Self-Construal,” *Journal of Consumer Research*, 39 (4), 704–19.
- White, Katherine, Rhiannon MacDonnell, and Darren W. Dahl (2011), “It’s the Mind-Set that Matters: The Role of Construal Level and Message Framing in Influencing Consumer Efficacy and Conservation Behaviors,” *Journal of Marketing Research*, 48 (3), 472–85.
- White, Katherine, Rhiannon MacDonnell, and John H. Ellard (2012), “Belief in a Just World: Consumer Intentions and Behaviors Toward Ethical Products,” *Journal of Marketing*, 76 (1), 103–18.
- White, Katherine and Bonnie Simpson (2013), “When Do (and Don’t) Normative Appeals Influence Sustainable Consumer Behaviors?” *Journal of Marketing*, 77 (2), 78–95.
- White, Katherine, Bonnie Simpson, and Jennifer J. Argo (2014), “The Motivating Role of Dissociative Out-Groups in Encouraging Positive Consumer Behaviors,” *Journal of Marketing Research*, 51 (4), 433–47.
- WHO (2014), “The Case for Investing in Public Health” (accessed January 29, 2019), [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/278073/Case-Investing-Public-Health.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/278073/Case-Investing-Public-Health.pdf).
- Wiidegren, Örjan (1998), “The New Environmental Paradigm and Personal Norms,” *Environment and Behavior*, 30 (1), 75–100.
- Wilhite, Harold and Rich Ling (1995), “Measured Energy Savings from a More Informative Energy Bill,” *Energy and Buildings*, 22 (2), 145–55.
- Winterich, Karen P., Rebecca Walker Reczek, and Julie R. Irwin (2017), “Keeping the Memory but Not the Possession: Memory Preservation Mitigates Identity Loss from Product Disposition,” *Journal of Marketing*, 81 (5), 104–20.
- Włodarczyk, Anna, Nekane Basabe, Darío Páez, and Larraitz Zumeta (2017), “Hope and Anger as Mediators between Collective Action Frames and Participation in Collective Mobilization: The Case of 15-M,” *Journal of Social and Political Psychology*, 5 (1), 200–223.
- Young, William, Kumju Hwang, Seonaidh McDonald, and Caroline J. Oates (2010), “Sustainable Consumption: Green Consumer Behaviour When Purchasing Products,” *Sustainable Development*, 18 (1), 20–31.
- Zane, Daniel M., Julie R. Irwin, and Rebecca Walker Reczek (2015), “Do Less Ethical Consumers Denigrate More Ethical Consumers? The Effect of Willful Ignorance on Judgments of Others,” *Journal of Consumer Psychology*, 26 (3), 337–49.
- Zaval, Lisa, Ezra M. Markowitz, and Elke U. Weber (2015), “How Will I Be Remembered? Conserving the Environment for the Sake of One’s Legacy,” *Psychological Science*, 26 (2), 231–36.