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 examining the most effective ways to encourage sustainable consumer behaviors. In the process of the review, the authors develop a comprehensive framework for conceptualizing and fostering sustainable consumer behavior change. The framework is represented by the acronym **SHIFT**, which encapsulates the set of principles that are outlined by the review. Our framework proposes that consumers are more inclined to engage in pro-environmental behaviors when the message or context takes into consideration how to leverage: **S**ocial influence, **H**abit, **I**ndividual self, **F**eelings and cognition, and **T**angibility. The authors then outline how the framework can be used by practitioners wishing to encourage sustainable consumer behaviors. Finally, the authors identify five broad challenges to encouraging sustainable behaviors and use these to develop novel theoretical propositions and directions for future research.

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

More than 15,000 scientists from 184 countries issue “warning to humanity”: A similar warning was first issued by scientists in 1992…. Humanity is now being given a second notice, as illustrated by these alarming trends. We are jeopardizing our future by not reining in our intense but geographically and demographically uneven material consumption….

 **~CBC News (2017), World Scientists’ Warning to Humanity: A Second Notice**

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 (2017), Founder and CEO of Interface Carpet**

 Our behaviors as individual “consumers” are having unprecedented impact 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; as well as 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, Unilever, and Starbucks embedding sustainability into the DNA of their brands (Hardcastle 2013). The current paper sets out to provide a review of the literature regarding sustainable consumer behavior change and outlines a comprehensive framework to guide researchers and practitioners in addressing sustainable consumption.

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 first quote above—traditional marketers should be cognizant that the very consumption mindset that they encourage is one of the key drivers of negative environmental impacts on our planet (Csikszentmihalyi 2000; Peattie and Peattie 2009). An alternative path is to recognize that firms able to not only operate more sustainably, but also to consider new models of business that offer and encourage sustainable consumer choices, can earn greater long-term profits (Kotler, Kartajaya, and Setiawan 2010). As the second quote suggests, a sustainable marketing focus can lead to positive social and environmental outcomes, as well as confer strategic business benefits. 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 (Banerjee, Iyer, and Kashyap 2003). A sustainable business focus has advantages such as the identification of new products and markets, leveraging emerging technologies, spurring innovation, driving organizational efficiency, and motivating and retaining employees (Hopkins et al. 2009). Finally, companies engaging in socially and environmentally responsible practices garner more positive consumer perceptions of the firm, as well as increases in profitability (Brown and Dacin 1997; Chernev and Blair 2015; Luo and Bhattacharya 2006; Olsen, Slotegraaf, and Chandukala 2014; Savitz and Weber 2013; Sen and Bhattacharya 2001). As firms begin to operate and offer products and services in a more sustainable manner they might, at the same time, wish to encourage sustainable behaviors on the part of consumers to maximize their sustainability and strategic business benefits.

While the question of how marketing relates to sustainable consumer behaviors has historically received some attention in the form of identifying the “green consumer” segment (Anderson Jr and Cunningham 1972; Kilbourne and Beckmann 1998), more recently marketing scholars have called for research examining the predictors of sustainable consumption (Kotler 2011; Menon and Menon 1997; Mick 2006). Moreover, rather than merely targeting the “green” consumer, marketers can expand their market for the long-term mutual benefit of the firm and the planet. In one example, the huge growth in the “sharing economy” demonstrates the substantial environmental and economic gains that are possible through shifting consumers sustainably, in this case, from *owning* new products to *accessing* existing products and services. The key question facing marketers is: How can consumers be further encouraged to recognize, seek out, and choose sustainable options? Indeed, Kotler raises this as our most pressing research imperative: “What factors lead consumers to give more weight to sustainability?” (Kotler 2011, p. 135).

The motivation for the current work is driven by this call for additional research on sustainable consumer behaviors and the need for a comprehensive review and framework regarding how, when, and why consumers are most likely to be swayed to engage in sustainable behaviors. We build on existing work that has aptly outlined the steps marketers can take in fostering sustainable behavior (McKenzzie-Mohr 2011; Peattie and Peattie 2009; Steg and Vlek 2009). While this existing work outlines the social marketing process and spotlights examples, it does not provide a comprehensive review of factors that influence sustainable consumer change. In addition, while existing work offers reviews of ways to encourage sustainable behaviors, it has often concentrated on a more focused set of factors that motivate sustainable behavior (Gifford 2014; Peattie 2010; Steg and Vlek 2009)[[1]](#footnote-1). The current work builds on existing work to give a broader and more comprehensive view of the literature. The first intended contribution of the work, then, is to generate a comprehensive framework to help both practitioners and researchers categorize and think about the drivers of sustainable consumer behavior. On the practitioner side, this framework is useful to for-profit firms and marketers, as well as social marketers and policy makers wishing to encourage sustainable behavior. Second, we further make a contribution by building upon existing work to highlight a key set of broader challenges to sustainable consumer behavior change, which is of practical and theoretical relevance. Finally, on the theoretical front, 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 resources utilized 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. We further 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 **S**ocial influence, **H**abit formation, **I**ndividual self, **F**eelings and cognition, and **T**angibility 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 generally report favorable attitudes towards pro-environmental behaviors (Trudel and Cotte 2009), they often do not subsequently display sustainable actions (Auger and Devinney 2007; Devinney et al. 2006; Kollmuss and Agyeman 2002; Young et al. 2010). This divide between what consumers say and do is arguably the biggest challenge for marketers, companies, public policy makers, and non-profit organizations aiming to promote sustainable consumption (Johnstone and Tan 2015; Prothero et al. 2011).

Thus, while 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. While we focus on environmental sustainability we note that, consistent with a holistic approach to sustainability (including environmental, and economic sustainability, Norman and MacDonald 2004), improving environmental sustainability often results in both social and economic advances (Chernev and Blair 2015; Savitz and Weber 2013). We examine the process of consumption including the search for information, the decision-making process, product or behavior adoption, product usage, as well as the disposal of goods and services 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 resources such as energy and water during product use (Lin and Chang 2012), and 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 long-term benefits to other people and the natural world. Thus, while broader marketing strategies can be useful in this domain, marketers also need a unique set of tools to address and 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.* We chose this journal set because these are the behavioral marketing and consumer behavior journals that are most highly regarded in the field, they all have high impact factors (of above 3.0), and they are all featured on the Financial Times Top 50 list. Beginning with 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 initial 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 of the literature as being the most frequently occurring concepts and because they allowed us to summarize the literature on sustainable behavior change in an inclusive manner. In order to extend our review, we then searched the literature more broadly by using our first set of search terms and then replacing the third search word with more specific labels that were relevant to our five themes. For example, for the first section on social influence we searched “social influence” and “norms.” Based on this, additional articles were identified in peer-reviewed academic journals in marketing, psychology, and economics. These articles were read and reviewed in terms of quality and relevance before they were included in our analysis. In total 295 articles were selected, including 56 articles related to social influence, 55 articles that discussed habit, 99 articles on the individual self, 61 articles related to feelings and cognition, and 38 articles related to tangibility. Next, we discuss the five identified routes to sustainable consumer behavior change.

THE SHIFT FRAMEWORK

*Social Influence*

 The first route to influencing sustainable consumer behaviors is social influence. Social influence refers to the notion that consumers are often impacted by the presence, behaviors, and the expectations of others. The literature suggests that 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 act in more sustainable ways.

*Social norms.* Social norms, or beliefs about what is socially appropriate in a given context, can have a powerful influence on sustainable consumer behaviors (Cialdini et al. 2006; Peattie 2010). Social norms predict sustainable behaviors such as avoiding littering (Cialdini, Reno, and Kallgren 1990), engaging in composting and recycling (White and Simpson 2013), conserving energy (Dwyer, Maki, and Rothman 2015; Goldstein, Cialdini, and Griskevicius 2008; Schultz et al. 2007), and choosing sustainably sourced food (Dowd and Burke 2013), eco-friendly transportation (Harland, Staats, and Wilke 1999), and green hotels (Teng, Wu, and Liu 2015). Social norms can be inferred from the behaviors of other people. For example, the actions of neighbors are a key predictor of the adoption of solar panel technology (Bollinger and Gillingham 2012) and recycling (Oskamp et al. 1991). 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). For example, seeing other people engage in a sustainable behavior or reading that “70% of your neighbors are composting” both convey descriptive norms. 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 behavioral commitments to engage in the sustainable activity (De Leon and Fuqua 1995) and 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 (Goldstein, Cialdini, and Griskevicius 2008). Notably, when the norm referred to the same context (the same hotel room as the guest), the highest rates of participation in the energy conservation program were observed. Although descriptive norms are often very influential, they should be used with caution. If the majority of people are not engaging in the desired sustainable behavior, highlighting the descriptive norm might unintentionally lead to decreases in the desired action (Cialdini 2003; Schultz et al. 2007).

The second type of norm is an *injunctive norm,* which conveys what is perceived as approved of by other people. Injunctive norms can influence sustainable behaviors (Reno, Cialdini, and Kallgren 1993; Schultz et al. 2007); they are most effective when combined with thoughts about the ingroup, and when they do not threaten feelings of being free to make one’s own choices (which can lead to “reactance” responses; White and Simpson 2013). In one example, Kronrod and colleagues (2012) found that injunctive wording that assertively told people what they *should* do (“Reducing air pollution: everyone *must* use more public transportation!”) led to unfavorable consumer responses. It was only under conditions where the behavioral domain was viewed as important that the effect was reversed, with consumers exhibiting more positive responses to injunctive norms. Thus, both descriptive and injunctive norms can impact sustainable behaviors, but these should be used with car (e.g., avoiding descriptive norms that convey low base rates and injunctive messages that are too assertive).

*Social identities.* A second form of social influence stems from the sense of identity that people derive from their memberships and associations with social groups. This research tradition is born out of Social Identity Theory and Self-Categorization Theory, both of which suggest that people not only want to view their own individual identity positively, they also want to have positive views of their *social* identities (Tajfel and Turner 1986; Turner 1985). One prediction stemming from these theories is that people want to fit in with their own ingroups and will engage in sustainable bevaviors if similar ingroup members are doing the behavior (Goldstein, Cialdini, and Griskevicius 2008; Han and Stoel 2017; Welsch and Kühling 2009). Moreover, viewing the self as being 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). Seeing one’s identity 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).

Another finding stemming from the social identity literature is that social identity effects are heightened for those high in *ingroup identification*. Identifying with the social group of “an organic consumer” or “a green consumer,” for example, predicts organic purchases (Bartels and Hoogendam 2011; Bartels and Onwezen 2014). Moreover, messages encouraging sustainable consumption are received more positively by majority group members, as well as those who are high in ingroup attachment (Grinstein and Nisan 2009). In one study, highlighting a shared, superordinate ingroup identity based on geographical region led to the greatest acceptance of information about drinking recycled water, especially for those who were high in ingroup identification (Schultz and Fielding 2014).

One additional implication of social identities is that individuals desire to positively view their own ingroups (Rabinovich et al. 2012) and do not wish to see their own ingroup outperformed by other outgroups (Ferguson, Branscombe, and Reynolds 2011). This is particularly true of outgroups that we do not wish to be associated with, or *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 to consumers. One practical implication of this work is that friendly challenges could be encouraged between competing groups (Vugt, Griskevicius, and Schultz 2014), such as two competing cities, neighborhoods, organizations, or business units.

*Social desirability.*Another means by which social influence can impact sustainable behaviors is via *social desirability*. Consumers tend to select sustainable options in order to make a positive impression on other people (Green and Peloza 2014; White and Peloza 2009) and are inclined to choose high-involvement sustainable options (e.g., hybrid vehicles) to convey social status to others (Griskevicius, Tybur, and Bergh 2010). However, sustainable behaviors are sometimes viewed negatively by observers (Brough et al. 2016; Minson and Monin 2012; Olson et al. 2016; Sadalla and Krull 1995; Shang and Peloza 2016). Thus, some consumers avoid acting sustainably to avoid looking bad to others (Brough et al. 2016; Sadalla and Krull 1995). In one instance, males avoided appearing “eco-friendly” because this 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* where they anticipate that other people might observe and evaluate their actions. Settings that are public lead to increased selections of sustainable options for self-presentation reasons (Green and Peloza 2014; Grolleau, Ibanez, and Mzoughi 2009; Peloza, White, and Shang 2013). In addition, making commitments to engage in sustainable consumer behavior can be an effective influence strategy, especially when commitments are public (Burn and Oskamp 1986; Gonzales, Aronson, and Costanzo 1988). For example, those who made a commitment to participate in an energy-conservation program and wore a pin as a public symbol of this commitment were the most likely to engage in a hotel energy-conservation program (Baca-Motes et al. 2012). Thus, work on social influence suggests that making the desired action something that is socially approved of, linked to important social identities, and visible to others can increase sustainable behaviors.

*Habit Formation*

While 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). The first necessary element in habit formation is repetition. When an action is repeated over time, the behavior is more likely to become a habit. The second necessary component of habit formation is that of automaticity. That is, habits tend to be characterized by being low in awareness and intent, low in cognitive effort, and difficult to consciously control. Finally, habits tend to be enacted in the same context over time (Verplanken and Aarts 1999). Many behaviors with sustainability implications—such as food consumption, choices of transportation, energy and resource use, shopping, and the disposal of products—are strongly habitual (Verplanken and Roy 2016). Actions 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.*Sometimes, for a new sustainable habit to be formed, an old, unsustainable habit must first be broken (Thøgersen and Møller 2008). The *habit discontinuity hypothesis* presents one promising way to break negative habits*.* This theory suggests that if the context in which habits arise changes in some way, it becomes difficult to carry out other habits that would normally 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; Thøgersen 2012; Verplanken et al. 2008; Walker, Thomas, and Verplanken 2015). Thus, combining context changes with other habit-formation techniques can be one way to encourage sustainable behaviors.

*Penalties.*Penalties are essentially forms of punishment that decrease the tendency to engage in an undesirable behavior. A penalty can include things like 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). In addition, taxes and tariffs can be effective in domains that involve strong habits (e.g., driving gasoline-powered vehicles; (Krause 2009). However, although penalties certainly can deter unsustainable behaviors in some instances, they can lead to backfire effects if the penalty seems unreasonable (Fullerton and Kinnaman 1995). Moreover, penalties can be difficult to enforce and monitor (Bolderdijk, Lehman, and Geller 2012). Research also shows that once a penalty is no longer enforced, the undesired behavior can be adopted once again. While penalties can be effective in some cases, they can sometimes backfire when they lead to negative affect and defensive responses (Bolderdijk, Lehman, and Geller 2012; Geller, Bechtel, and Churchman 2002; Steg and Vlek 2009). Thus, it is often desirable to turn to positive behavior-change strategies instead, which we discuss next.

*Implementation intentions*. One means of transitioning from an old habit to a new one is to have people 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 via 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 behavior change (McKenzie-Mohr 2000). Thus, one strategy to encourage sustainable habit formation is quite simply to make the action easy to do. Contextual changes that improve the ease of engaging in sustainable behaviors, such as placing recycling bins nearby and offering showerheads with “low-flow” settings, encourage such behaviors (Brothers, Krantz, and McClannahan 1994; Ludwig, Gray, and Rowell 1998). Furthermore, recycling programs lead to greater compliance rates when they require less complex sorting of materials (Gamba and Oskamp 1994). Conversely, when unsustainable behaviors become more difficult, this can decrease such actions (Houten, Nau, and Merrigan 1981).

One means of making sustainable actions easier is to make them the default (Frederiks, Stenner, and Hobman 2015; Pichert and Katsikopoulos 2008; Theotokis and Manganari 2015). Defaults work for three main reasons: 1) people must spend time and effort to move away from the status quo; 2) a default implies an endorsed or approved-of option; and 3) a default serves as a reference point that consumers are motivated to adhere to (Dinner et al. 2011; Frederiks et al. 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 by setting defaults can make it easier for consumers 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 impact many sustainable behaviors including waste disposal, energy usage, and recycling (Osbaldiston 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 subsequent positive habit formation. Monetary incentives such as rebates, tiered pricing, and cash can encourage the adoption and maintenance of sustainable behaviors (e.g, Diamond and Loewy 1991; Slavin, Wodarski, and Blackburn 1981; Wilhite and Ling 1995). Incentives have been shown to impact sustainable behaviors such as waste disposal and clean-up (Baltes and Hayward 1976), energy usage (Abrahamse et al. 2005), and transportation choices (Everett, Hayward, and Meyers 1974).

Although incentives can be compelling motivators of sustainable behaviors, using them does have some potential downsides (Bolderdijk and Steg 2015). First, rewards need to be substantial and inspiring enough to motivate the target audience. Smaller monetary rewards are often less motivating than other types of incentives including a free gift, a lottery entry, or social praise (Handgraaf, de Jeude, 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 habitual changes (Geller, Bechtel, and Churchman 2002). Further, incentives can have the unintended consequence of decreasing the desired behavior, because the intrinsic motive to engage in the action is reduced (Bowles 2008). Thus, the literature suggests that small monetary incentives are not uniformly successful in impacting sustainable behaviors, but larger and more meaningful rewards may be effective. Finally, incentives should be used carefully, so as to not decrease intrinsic motivations.

*Feedback.*Another means of encouraging sustainable-habit formation is to use feedback. Feedback involves providing consumers with specific information about their own performance on a given task or behavior. In the domain of sustainable consumer behaviors, feedback can be given for actions like water and energy usage, and this can also be provided with reference to the consumer’s own past behaviors or in comparison to the performance of other individuals (e.g., Abrahamse et al. 2007; Fischer 2008). Research suggests that the efficacy of using feedback can be enhanced by providing it over an extended period of time, presenting it in a clear manner, and using interactive digital formats (Chiang et al. 2014; Fischer 2008; Karjalainen 2011). Feedback to the consumer in real-time can be particularly effective as it allows individuals to make the connection between their actions and outcomes, and to adjust their future behaviors accordingly (Fischer 2008). Sharing group feedback with households and in work settings can also be an effective behavior-change strategy (Schultz 1999; Schultz et al. 2007; Siero et al. 1996).

*The Individual Self*

This section highlights the central role of the individual self when encouraging sustainable consumer behaviors. Factors linked to the individual self can have a powerful influence on our consumption behaviors, including those linked to sustainability (Hogg and Mitchell 2010; Sirgy 1982). The concepts discussed 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 via consumption (Dunning 2007; Sedikides, Gaertner, and Toguchi 2003; Taylor and Brown 1988). As a result of the desire to view the self positively, people 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 201Zane, Irwin, and Reczek 2015). Further, some forms of sustainable behavior change (e.g., travel behaviors) are avoided because changing can threaten the self (Murtagh et al. 2015). In another 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 important for sustainable behavior change. For example, self-affirmation, or the endorsement of important self-values, mitigates self-protective responses, leading to greater endorsement of sustainable actions (Brough et al. 2016; Prooijen 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, it can lead to greater well-being for the giver (Donnelly et al. 2017). Finally, consumers take better care of and are less likely to trash (versus recycle) identity-linked products (Trudel, Argo, and Meng 2016).

*Self-consistency.*One implication related to the individual self is that in addition to wanting to see the self in a positive light, people want to construe the self as being consistent.Self-consistency research shows that when a consumer reaffirms a component of the self-concept (e.g., being environmentally concerned) or engages in a sustainable behavior at one time point, this often leads to consistent sustainable behaviors in the future (e.g., 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 commitments, when the firm itself adheres to green values this can lead to increased consumer conservation behaviors (Wang, Krishna, and McFerran 2016).

Another implication of self-consistency motivations is that simply reminding consumers of a time when their behavior was inconsistent with a personally held belief or value related to sustainability (i.e., a “hypocrisy manipulation”) can subsequently lead to more sustainable actions (Dickerson et al. 1992; Peloza, White, and Shang 2013). Further, evidence suggests that people who engage in a sustainable action in one domain are often more likely to perform sustainably in other domains too (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).

While there are many examples of self-consistency effects, inconsistency effects can also arise (Phipps et al. 2013). Licensing effects may occur wherein individuals who have engaged in a sustainable action at one time point will later display the tendency to 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” virtual shopping task that asked them to select from sustainable products (compared to those who selected from conventional 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. For example, Catlin and Wang (2013) found that when consumers knew that a recycling option was available they used more resources. In addition, improving vehicle gas mileage can lead drivers to travel greater distances (Small and Dender 2007). Similarly, usage can increase when the efficiency of air-conditioning and heating is enhanced (Sorrell, Dimitropoulos, and Sommerville 2009). Moreover, both inconsistency and consistency can emerge in the same context. People who brought a reusable shopping bag subsequently spent more money on both sustainable and indulgent food options (Karmarkar and Bollinger 2015). Further, making a sustainable choice (e.g., choosing LED bulbs) 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).

 Inconsistency effects can be mitigated if the initial sustainable action is effortful in nature (vs. easy and costless; Gneezy et al. 2012). Conversely, if the initial behavior allows the consumer to present the self in a positive light (i.e., engage in impression management), this can decrease the likelihood of subsequently engaging in meaningful prosocial actions. In one example, consumers who provided “token” support for a cause that allowed them to publicly communicate a positive behavior to other people (e.g., joining a public page on Facebook) were subsequently less inclined to take part in a meaningful prosocial action, such as donating money or volunteering for the cause (Kristofferson, White, and Peloza 2014). People who took part in an initial private token behavior subsequently viewed the cause as a reflection of their underlying values and were more likely to follow through with consistent behaviors. Thus, those wishing to support enduring behavior change should encourage initial sustainable actions that are somewhat effortful, made in ways that feel volitional, and are connected to the consumer’s values (Evans et al. 2013; Thøgersen 2005).

*Self-interest.*A time-tested method to appeal to the individual self is to offer some sort of self-relevant benefit to the consumer for engaging in the desired behavior (Evans et al. 2013). Economic and evolutionary theories both suggest that appeals to self-interest can be effectively leveraged to influence pro-environmental behaviors (Griskevicius, Cantú, and Vugt 2012). One strategy is to highlight the self-benefits associated with a given pro-environmental product, service, or behavior (Brunel and Nelson 2000; Green and Peloza 2014; Nolan et al. 2008; White and Peloza 2009). Research shows that if self-motives are fulfilled (vs. not fulfilled), consumers are more influenced by sustainable attributes (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). Barriers to sustainable consumption include the belief that sustainable attributes can have negative implications for other self-relevant attributes including 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 (Gleim et al. 2013; Hughner et al. 2007). Messages that appeal to self-interest are most effective in private because the consumer is more focused on the self (Green and Peloza 2014). In addition, the individual self can be primed with the wording of an appeal (e.g., “You as an individual can make a difference,” White and Simpson 2013). It has been suggested that using self-interest appeals alone is often not sufficient to motivate sustainable behavior change (McKenzie-Mohr 2000). While appeals to self-interest have the benefit of communicating ways to overcome barriers to behavior change, a focus on self-interest can also crowd pro-environmental motivations and thus reduce positive spillover to other behaviors (Schwartz et al. 2015).

*Self-efficacy.* One other way in which the individual self is pivotal in determining sustainable consumer behaviors is related to self-efficacy. According to Bandura (1977), self-efficacy consists of two interrelated components. First, the individual has to have the belief that he or she can indeed undertake the required action. Second, the individual must believe that carrying out the behavior will be effective in terms of making an impact. Consumers’ feelings of self-efficacy predict sustainable attitudes, as well as the tendency to stick with pro-environmental behaviors over time (Armitage and Conner 2001; Cleveland, Kalamas, and Laroche 2005; Ellen, Wiener, and Cobb-Walgren 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 the degree of consumer compromise is low, and there is high confidence that a particular behavior will make a difference (e.g., self-efficacy is high).

*Individual differences****.*** One 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 individual differences in preferences for green products and behaviors. One segmentation refers to the “LOHAS” consumer segment, which stands for “lifestyles of health and sustainability” (Natural Marketing Institute 2017). Marketers can find success targeting those with strong personal norms and beliefs around sustainability or by strengthening existing personal norms via priming (Peloza, White, and Shang 2013; Steg 2015; Verplanken and Holland 2002). In addition, individual differences in mindfulness (Bahl et al. 2016; Barber and Deale 2014; 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. Further, traits such as extraversion, agreeableness, conscientiousness, and environmental concern predict reports of 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). Sometimes gender differences have been noted, wherein females are more likely to exhibit sustainable consumer behaviors (Dietz, Kalof, and Stern 2002; Eagly 2009; Luchs and Mooradian 2012). This might be partly due to the fact that females tend to be higher in traits such as agreeableness, interdependence, and openness to experience (Eagly 2009; Luchs and Mooradian 2012). Other work finds that those who are more liberal, younger, and more highly educated are more 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, as they are more likely to positively respond to sustainable products, services, and behaviors (Anderson Jr and Cunningham 1972; Kinnear, Taylor, and Ahmed 1974; Laroche, Bergeron, and Barbaro-Forleo 2001). Further, interventions should be tailored to reflect the specific needs and motivations, barriers, and benefits of the target consumer (Abrahamse et al. 2007; 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 while affective reactions are often more automatic in nature (Zajonc 1980), more controlled, high-order affective reactions can also emerge after the cognitive consideration of information and consequences (Shiv and Fedorikhin 1999). We first outline how negative and positive emotions can impact pro-environmental behaviors. Then we discuss the role of cognition in sustainable actions.

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

Advertising communications regarding green consumption frequently use *fear appeals* that highlight the negative consequences of a given action or inaction (Banerjee, Gulas, and Iyer 1995), such as dramatic imagery related to the consequences of climate change (O’Neill and Nicholson-Cole 2009). Fear is a highly arousing negative emotion associated with appraisals of low certainty and lack of individual control (Lerner and Keltner 2000). On the one hand, environmental threats often are communicated in ways that leave the individual feeling that the consequences are uncertain and temporally distant. This can make the situation seem less dangerous, leading to inaction (Hathaway 2017; Lowe et al. 2006). However, using strong fear appeals can lead to a sense of being unable to overcome the threat and may 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 be particularly influential on sustainable intentions and behaviors (Carrus, Passafaro, and Bonnes 2008; Jiménez and Yang 2008; Luchs and Mooradian 2012; Mallett, Melchiori, and Strickroth 2013; Onwezen, Antonides, and Bartels 2013). This is largely due to the appraisal of individual responsibility associated with guilt (Lerner and Keltner 2000), leading to people feeling morally responsible for the environment and behaving in an environmentally friendly manner (Kaiser and Shimoda 1999). Research involving *anticipated guilt* (Grob 1995; Kaiser 2006; Mallett 2012; Peloza, White, and Shang 2013; Theotokis and Manganari 2015) shows that guilt can influence people to act in a pro-environmental manner (Peloza, White, and Shang 2013; Steenhaut and Kenhove 2006). Importantly, anticipated guilt is more effective at encouraging sustainable behavior when consumers are subtly asked to consider their own self-standards of behavior (personal norms), rather than when they are exposed to explicit guilt appeals, which can backfire (Peloza et al. 2013). Guilt can also be experienced as a result of the actions of one’s own group. Such c*ollective guilt* can be a motivator of pro-environmental action (Ferguson, Branscombe, and Reynolds 2011). For example, research suggests that information conveying that one's country has a significant carbon footprint leads to feelings of collective guilt, and also predicts willingness to support a sustainable cause (Mallett, Melchiori, and Strickroth 2013) and to engage in sustainable behaviors (Ferguson, Branscombe, and Reynolds 2011).

In addition to fear and guilt, sadness has been examined as a driver of sustainable attitudes and behaviors (Schwartz and Loewenstein 2017; Sevillano, Aragonés, and Schultz 2007). Sadness can 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, when the emotion had 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 when they are currently experienced.

*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). Engaging in sustainable actions has been shown to lead to “warm glow” feelings that can spill over and lead to more favorable evaluations of the overall service experience (Giebelhausen et al. 2016). Moreover, positive emotions such as joy and pride have been shown to inﬂuence consumer intentions to decrease use of plastic water bottles; and optimism can motivate the maintenance of sustainable behaviors over time (Peter and Honea 2012).

Research further finds that feelings of *affinity towards nature* predict sustainable attitudes and intentions (Kals, Schumacher, and Montada 1999). Further, research (Wang, Mukhopadhyay, and Patrick 2017) demonstrates positive sustainable actions in response to “cute” appeals (e.g., communications featuring cute animals), particularly when the consumer exhibits “approach” motivational tendencies. This is driven by increased feelings of tenderness in response to such appeals. 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 symbolic and affective benefits (Steg 2005).

Research has examined the role of specific positive emotions such as *pride* in determining sustainable consumer behaviors (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).

*Cognition.*One basic means of persuading consumers to engage in pro-environmental behaviors is to present information that communicates the desired (and undesired) sustainable behaviors and their consequences (McKenzie-Mohr 2000). Indeed, some have lamented that people’s dearth of knowledge—due to factors such as lack of exposure to information (Gifford 2011), information overload (Horne 2009; Neumann, Roberts, and Cauvin 2012), and confusion (Carrigan and Attalla 2001; Chen and Chang 2013)—can contribute to low uptake of pro-environmental behaviors. Information via 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 their consequences (Peattie and Peattie 2009; Sussman and O’Brien 2016). Meta-analytic reviews suggest that information has a significant, albeit moderate influence on pro-environmental actions (Delmas, Fischlein, and Asensio 2013; Osbaldiston and Schott 2012).

*Eco-labeling*. Eco-labeling is one means of conveying information about the sustainable attributes of a product or brand (Parguel, Benoît-Moreau, and Larceneux 2011). Labels that are attention-grabbing, easily understandable, and consistent across categories can enable consumers to make better informed pro-environmental decisions (Borin, Cerf, and Krishnan 2011; Taufique, Vocino, and Polonsky 2017; Thøgersen 2000). It has been suggested that positive eco-labels would be more impactful if they were contrasted against negative labels that highlight products with environmentally harmful attributes (Borin, Cerf, and Krishnan 2011). Moreover, eco-labeling can seem more transparent and unbiased if it is certified by a third party that validates the sustainability claims (Manget, Roche, and Münnich 2009). Importantly, research suggests that interventions that only provide information are often not enough to spur long-term sustainable changes (Abrahamse et al. 2005; Geller, Paterson, and Talbott 1982). Because of this, combining information with other tactics can be an effective strategy (Peattie and Peattie 2009).

 *Framing*. Marketers can strategically choose message framing to encourage sustainable choices (Ungemach et al. 2017). For example, consumers care much more about future losses than about future gains (Hardisty and Weber 2009; Thaler 1981). Therefore, when promoting energy-efficient appliances, labels should compare energy costs rather than savings (Bull 2012; Min et al. 2014). Furthermore, the information can be aggregated to make a bigger impact: Use lifetime energy costs (rather than annual energy cost) for appliances (Kallbekken, Sælen, and Hermansen 2013), and use cost-per-100,000-miles labeling to promote efficient car sales (Camilleri and Larrick 2014). Loss-framed information is especially effective when combined with concrete information on how to engage in the behavior—for example, to improve the quantity and accuracy of residential recycling (White, MacDonnell, and Dahl 2011). Framing can have differential effects on different people. For example, 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). Therefore, marketers and policy makers should consider who the target of communications is when framing information.

*Tangibility*

One unique facet of sustainable consumption is that pro-environmental actions and outcomes can seem abstract, vague, and distant from the self (Reczek, Trudel, and White 2018; Spence, Poortinga, and Pidgeon 2012). 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 only realized in the future (Amel et al. 2017; Spence, Poortinga, and Pidgeon 2012). Moreover, pro-environmental outcomes are difficult to track and measure, because changes emerge slowly over time, and uncertainty surrounds problems and their solutions (Gifford 1991; Weber 2010). Further, uncertainty surrounding pro-environmental actions and outcomes (Pindyck 2007), as well as feelings of risk and uncertainty can emerge due to firm actions such as greenwashing (Chen and Chang 2013). For these reasons, sustainability is a concept that is vague, abstract, and psychologically distant to the typical consumer (Reczek, Trudel, and White 2018). Next, we outline some solutions to the issue of tangibility.

*Matching temporal focus*. While sustainability is naturally future-focused, consumers are often present-focused. Moreover, when a future environmental payoff is judged to be further off in the future, 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). Indeed, people who have a greater focus on the future are more inclined to engage in 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 asking consumers to consider their legacy increases sustainable choices (Zaval, Markowitz, and Weber 2015).

*Communicate local and proximal impacts.* The perceived tangibility of sustainability issues can be enhanced by communicating about pro-environmental actions and outcomes in ways that reflect immediate and local 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). Research suggests that drawing on people’s attachments to a specific place can also motivate sustainable actions (Devine-Wright and Howes 2010; Gifford 2014). Another way to make environmental issues more tangible is to draw upon current issues such as extreme weather events because people are more likely to report believing in human-induced climate change when the weather is extreme (Li, Johnson, and Zaval 2011; Westerling and Bryant 2008).

*Concrete communications*. Another way to tackle intangibility is to make sustainability issues more relevant and concrete for the self (Akerlof et al. 2013; Arnocky, Milfont, and Nicol 2014; Li, Johnson, and Zaval 2011; Reczek, Trudel, and White 2018; Spence, Poortinga, 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 by outlining clear steps to make a difference (White, MacDonnell, and Dahl 2011). Communications can make the consequences of sustainable inaction (or action) apparent by using techniques such as vivid imagery, analogies, and narratives (Marx et al. 2007).

*Encourage the desire for intangibles.* A challenge for encouraging pro-environmental behaviors is that consumers often have a desire for ownership of material goods. One means of moving towards more sustainable consumption is to promote dematerialization (Csikszentmihalyi 2000), wherein 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 co-creation of value (Vargo and Lusch 2004). Moreover, trends such as the emerging “sharing economy” with its ideal of collaborative consumption of idle resources (Donnelly et al. 2017) and “voluntary simplicity,” wherein consumers simplify their lifestyles rather than focusing on the possession of material goods (Cherrier 2009), indicate that needs can be fulfilled without the possession of tangible products being a paramount goal.

*How to Use the SHIFT Framework in Practice*

 Thus far, we have highlighted five routes to sustainable behavior change and identified specific ways to influence consumer behavior utilizing these behavioral principles. In Web Appendix A we summarize different tactics that can be implemented within each principle in our framework. 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 Appendix B).[[2]](#footnote-2) We note that, oftentimes, there are multiple barriers to sustainable behavior change and therefore combining strategies can be impactful (Osterhus 1997; Stern 2011).

While our framework nicely 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 these barriers. A primary barrier refers to one that exerts the strongest avoidance response, while a secondary barrier is the factor that exerts the next strongest avoidance response on the part of the target consumer. Thinking about barriers in terms of the SHIFT factors—e.g., a barrier can be linked to social influence (e.g., the sustainable action is seen as socially undesirable) and habit (e.g., the existing unsustainable action is highly habitual)—can help the practitioner draw connections to what tools within the framework might facilitate change. We provide examples of possible focal consumer behaviors in Appendix C and potential strategies drawn from our framework for each based on the primary and secondary barriers to action in Appendix D.

In one example of identifying primary and secondary barriers that explicitly relied upon 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 by allowing it to decompose naturally). They discovered that this was due to barriers that were related to social norms (the primary barrier: the norm was that nobody was engaging in the behavior and that it did not seem approved of) and individual factors (the 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, and they did so by using strategies related to social norms and the individual self. These researchers created messages that were delivered to residents on door hangers and 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 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.

In another example, Our Horizon is a non-profit (ourhorizon.org) whose mandate is to discourage gasoline consumption from 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 has been encouraging local governments to implement warning labels on gas pumps, in a similar manner to how many nations now place warning labels on tobacco packaging. The labels that the organization plans to implement both a) help to communicate what is normatively approved of and b) describe concrete and personally relevant local impacts (Appendix F).[[3]](#footnote-3) While we have provided examples to illustrate the SHIFT principles in practice, it is important recognize that different behaviors and segments will have unique barriers to and benefits to behavior change. We include more examples of using barriers to identify tactics based on our Framework in 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 non-profits can use the SHIFT framework. However, there is one important nuance: The practitioner should make sure that the tools employed are complementary rather than in opposition with each another. In one example, in the grasscycling study described above, 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).

*Theoretical Implications and Directions for Future Research*

In the preceding review, we identified from the behavioral science literature key factors that can promote sustainable consumer behavior. We distilled this research down to five routes to sustainable behavior change, while delineating specific behavior-change strategies within each one of the factors. The focus of the review portion of this manuscript has been to identify *what* the main drivers of sustainable consumer behavior are, according to existing research. In this next section of the manuscript, we will go further to highlight a set of propositions regarding *when* and *why* the principles and strategies within each of the routes to sustainable behavior change (e.g., the SHIFT factors) will be most relevant. We do so by first outlining a set of key challenges that make sustainable consumption distinct from typical consumer behaviors. We then use this set of challenges to make predictions regarding when and why each of the different routes to sustainable behavior change will be most influential in determining sustainable consumer behaviors.

*What makes sustainable consumer behaviors different?* Drawing on our review, we suggest that there are five key dimensions that make sustainable consumer behaviors distinct from more typical consumption behaviors—*the self-other trade-off, time horizon, the requirement of collective action, the problem of abstractness, and the need to replace automatic with controlled processes*. First, sustainable behaviors are perceived as having costs to the self, be it increased effort, increased cost, inferior quality, or inferior aesthetics. At the same time, such actions make positive impacts on environmental and social outcomes that are external to the self (White et al. 2011; see also Campbell and Winterich 2018). Thus, while a traditional view of consumer behavior highlights that consumers will choose and use products and services in ways that satisfy their own wants and needs (Solomon et al. 2017), 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). We call this challenge *the self-other trade-off,* and the term “other” is intended to refer to entities that are external to the self.

As a second distinction, 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 only be achieved at some future point in time (Amel et al. 2017). As we have seen, consumers view payoffs to be less desirable the further off they are in the future (Hardisty and Weber 2009; Vugt, Griskevicius, and Schultz 2014). 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*.

Third, sustainable behaviors often require collective as opposed to individual action (Bamberg, Rees, and Seebauer 2015). In order for the benefits of sustainable behaviors to be fully realized, they must be undertaken by a large group of people, rather than an individual. This differs from traditional consumer behaviors, where the outcome is realized if only the individual engages in the action. This is also distinct from other behaviors with a long time horizon, like health-promotion behaviors (exercising and eating healthy) because these can be enacted at the individual level with observable results. We call this the *challenge of* *collective action*.

Fourth, sustainable consumer behaviors are characterized as being abstract, uncertain, and often difficult for the consumer to grasp (Reczek et al. 2018). Furthermore, the sustainable behaviors that need to be enacted are themselves often unclear, and their consequences can involve uncertain and fuzzy outcomes (Weber 2010). Although traditional consumer behaviors can of course carry different elements of risk and uncertainty, the outcomes of choices in traditional consumer contexts are usually more clear and certain when compared to sustainable consumer behaviors. We call this challenge *the problem of abstractness*.

Fifth, we note that many unsustainable behaviors have become learned in ways that have made 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 (like carrying one’s own shopping bag). We call this challenge *the need to replace automatic with controlled process*. We next describe each of our SHIFT factors in light of when and why these different routes might best be used to resolve these five key challenges to sustainability marketing.

*Social Influence.* Social influence is most strongly linked to the challenges of *the self-other trade-off, the requirement of collective action, and the problem of abstractness.* In terms of *the self-other trade-off*, we suggest that social-influence effects are often related to the motive for self-enhancement or the desire to feel positively about the self (Leary and Baumeister 2000; Leary and Kowalski 1990). Although sustainable consumption may come at some cost to the self, we suggest that social self-enhancement can be a positive repercussion that can outweigh the costs of sustainable action. Thus, our first propositions are linked to the notion that sustainable consumer behaviors will be more likely to occur under conditions where self-enhancement is possible and desired. In support of this, people are more likely to select sustainable options when the setting is public or status motives are activated (Green and Peloza 2014; Griskevicius et al. 2010). However, work has not fully delineated other predictions stemming from this theoretical proposition such as the types of sustainable behaviors that might be most susceptible to social-influence. First, some sustainable behaviors are more public in nature (putting one’s recycling on the curb on collection day), whereas other behaviors are more private (turning down the thermostat). Further, consumer behaviors can vary in terms of how symbolic they are, in that they convey important information about the self to others (e.g., Berger and Heath 2007; White and Argo 2011). For example, driving an electric car might convey more symbolic elements than using vinegar instead of weed killer in one’s yard. Thus, our first research proposition to be drawn from the framework is:

P1: Sustainable consumer behaviors that are more (vs. less) observable to others or that have symbolic (vs. non-symbolic) elements are more likely to be driven by social factors such as the presence of, behaviors of, and/or expectations of others.

Moreover, along with product type, there are likely to be individual difference moderators that predict the self-enhancement benefits to be derived from sustainable consumption. Past research suggests that those who are high in public self-consciousness (Scheier and Carver 1985) or self-monitoring (Snyder 1974) might be more attuned to social factors and adjust their consumption behaviors accordingly in ways that allow for impression management (White and Dahl 2006). Future research might thus examine the prediction that:

P2: Individual differences that relate to the desire for self-enhancement in public contexts such as public self-consciousness and self-monitoring may moderate the influence of social factors such as the presence of, behaviors of, and/or expectations of others on sustainable consumer behavior.

In addition, *the challenge of collective action* is relevant to social influence. 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, it has been examined 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 change. In fact, because sustainable outcomes require that actions be undertaken on a large scale, it may be the case that collective action is more motivational in the domain of sustainability than other positive behavior domains such as organizational leadership. This is an open question for future research to examine. Thus:

P3: Messages communicating both the behaviors of others (collective action) and collective efficacy will increase the tendency to engage in sustainable actions.

Moreover, we propose that collective action might be more motivating for some individuals than others. In particular, those who gain a sense of self-concept from their group memberships—such as those who are high in collective self-esteem (Luhtanen and Crocker 1992) and those high in interdependent self-construal (Singelis 1994)—might be particularly motivated by messages conveying the presence of collective action and communicating collective efficacy.

P4: Messages communicating both collective action and collective efficacy will be more impactful among those high (vs. low) in collective self-esteem and those who are more interdependent (rather than independent in nature)

Social influence is also linked to *the problem of abstractness*. 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 (“Exactly what is the most sustainable option for baby diapers?”) or uncertain (“Will engaging in this behavior really have the desired impact?”), people may be more influenced by social factors. Finally, those who are high in individual differences in uncertainty avoidance (Hofstede 2001) might be more influenced by social factors when ambiguity or uncertainty is high. Thus:

P5: 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 more influential in determining behavior. This might be pronounced among those high in uncertainty avoidance.

*Habit*. Habit formation is most strongly related to our fifth challenge to sustainability—the fact that behavior change is linked to the need to *replace automatic with controlled processes*. At least in the initial stages, sustainable behavior change means replacing ingrained habits with more effortful and controlled conscious actions. Research shows that those who have their processing resources occupied are less likely to engage in more deliberative processing (Gilbert, Pelham, and Krull 1988; White et al. 2016), the implication being that sustainable behavior might be easiest to change if consumers have processing resources to engage in more controlled thought processes. This might especially be true for more complex behavior changes (e.g., planning and following through with a plan to car pool to work, Gilbert, Pelham, and Krull 1988), as opposed to curtailment behaviors that merely involve decreasing the frequency or duration of current behaviors (e.g., taking shorter showers).

P6: When processing resources are constrained in some way, consumers will be less likely to engage in sustainable consumer behaviors, especially those behaviors that involve more controlled and deliberative thought.

In addition to major life changes allowing for other forms of habit change, it may also be possible that a certain mindset can lead to habit change (Price et al. 2017). Individuals who have a “fresh start” mindset exhibit more positive attitudes towards products that allow for a fresh start and more positive intentions to donate to charities focused on giving recipients some form of fresh start (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,” and show that it can be both measured and manipulated. One possibility is that a fresh-start mindset might be applicable in terms of habit formation. Perhaps taking a “fresh start” view of a new behavior could serve as a form of discontinuity and make habit change more likely.

P7: Those in a fresh-start mindset (either measured or manipulated) will be more inclined to change to sustainable consumer behavior habits, particularly if the context highlights the possibility of a fresh start.

*Individual Self*. The challenges of the *self-other trade-off, long time horizon,* *the requirement of collective action,* and *the problem of abstractness* are most strongly linked to the individual self. In terms of the *self-other trade-off,* sustainable consumption requires that individuals forgo self-benefits for some broader social or environmental good. One question is whether people’s views of their self-concept might predict sustainable consumer behaviors. While some individuals tend to have a more independent (i.e., the self is separate and distinct from others) view of the self, others have a more interdependent (i.e., the self is connected with others) self-construal (Markus and Kitayama 1991; Singelis 1994). One possibility is that those who think of the self more 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, particularly those that may assist ingroup members. Past research has found, for example, that charitable giving behaviors are more likely among those who are interdependent (Winterich and Barone 2011), particularly when the target is considered to be an ingroup member (Duclos and Barasch 2014). Thus, research might test the following proposition:

P8: Those who are more interdependent show more environmental concern and are more likely to engage in sustainable consumer behaviors. This effect may be enhanced when it is salient that the sustainable action helps relevant ingroup members.

Future work might examine how to activate more transcendent construals of the self, encompassing not only the individual self and close others, but also other species and the biosphere. It may be that encouraging such transcendent views of the self can increase eco-friendly actions. In addition, work could examine different facets of self-identity (e.g., moral identity) in driving sustainable behaviors. While work 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 sustainable behaviors are viewed as moral obligations that are predicted by moral identity.

P9: Encouraging the self to be seen as transcendent and connected to other species and the biosphere will lead to increases in sustainable behaviors. Both individual differences in moral identity and moral-identity primes will increase sustainable consumer behaviors.

Along with the self-other trade-off, the notion *of long time horizons* 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 (Muraven and Baumeister 2000). Sustainable behaviors present a unique self-regulation dilemma. While 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 payoff that is not only temporally distant, but that is broader than the self (not purchasing that sporty car to reduce carbon emissions, the effects of which will only be realized in the future). While 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 (Arbuthnott 2009). Existing work shows that those who have their regulatory resources depleted are more susceptible to temptations and impulse buying (Baumeister 2002; Baumeister et al. 1998). 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. One possibility is that sustainable behaviors that relate to limiting hedonic or pleasurable self-experiences might be most susceptible to regulatory failures.

P10: Those whose regulatory resources are somehow limited will be more likely to engage in unsustainable behaviors. This may particularly be the case when the unsustainable choice is high in hedonic pleasure.

*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 consider directly 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 and his colleagues (2011) have manipulated a focus on the future self by showing people a digital image of what their future self might look like. These researchers find that increasing connectedness to the future self increases willingness to invest in retirement savings (Hershfield et al. 2011). One possibility is that manipulations that create a connection between the current and the future self might lead to increases in sustainable consumer behaviors:

P11: Those consumers who are encouraged to focus on the future self will be more likely to engage in sustainable consumer behaviors.

*Feelings and Cognition*

Feelings are closely related to the challenges of *the self-other trade-off* and *the problem of abstractness.* The nature of self-other trade-offs in sustainable behavior means that people often have to undergo hedonic costs to the self or relinquish the possibility of positive affect in order to maximize outcomes for others. 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 also been shown to provide positive affect, sometimes termed the “warm glow” (Giebelhausen et al. 2016). One possibility is that focusing on how sustainable behaviors can create positive affect in the present might increase sustainable behaviors. We propose that:

P12: Sustainable behaviors that provide greater immediate (vs. later) warm-glow feelings or positive affect will lead to decreased perceptions of a self-other trade-off and increase the likelihood of sustainable actions.

In addition, our review revealed that there is a heavier emphasis on negative (vs. positive) emotions in sustainable consumption research. Future work might look further at the role of positive feeling states in influencing sustainable consumption. For example, while research has examined the impact of awe on prosocial behaviors more generally (Piff et al. 2015), to our knowledge work has not looked at how awe impacts sustainable behaviors. Future research could examine how expansive emotions like awe and empathy predict sustainable behaviors. Moreover, emotions such as moral elevation might be particularly relevant to examine in this context.

P13: Discrete positive emotions such as awe, empathy, and moral elevation will predict positive 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 various emotions related to sustainable behaviors. Images have been shown to activate emotions more readily in contexts such as communicating about intergroup conflicts (Brantner, Lobinger, and Wetzstein 2011). Thus, visual information may be best to communicate how other people or inanimate beings will be affected in order to elicit concrete emotions. These effects may be moderated by whether the consumer is more of a visualizer (Richardson 1977).

P14: Visual communications (vs. text) will be effective at eliciting other-focused emotion such as love and empathy and lead to greater participation in sustainable actions. This effect will be enhanced for individuals who are visualizers.

Cognition relates to *the problem of abstractness.* Consumers can learn more about the concrete details of benefits and values in order to combat the deterrent effects of abstractness and strengthen their interest in acting sustainably. However, certain consumers may be more likely to look for this information on packaging and other materials and thus be more influenced by it.

P15: Need for cognition will drive search for information on trade-offs in sustainable behaviors, leading to greater effectiveness of eco-labeling and other information strategies.

Combining feelings and cognition can help people use both affect and cognition simultaneously to successfully change behavior. This can be effective in tackling *the problem of abstractness*. Climate change and other issues are serious and can have large-scale consequences, making the acts carried out by individuals seem small and inconsequential. This can lead to green fatigue and be demotivating to consumers (Guyader, Ottosson, and Witell 2017). One solution may be to celebrate small wins; there are many relatively small actions or milestones that can be measured along with virtual rewards to keep consumers motivated and engaged.

P16: Rewarding small milestones will encourage consumers to continue engaging in environmentally friendly behaviors and help avoid green fatigue.

 *Tangibility*. Tangibility is linked to *the long time horizon,* *the challenge of collective action,* *the problem of abstractness,* and *the need to replace automatic with controlled process*. In fact, the long time horizon and the problem of abstractness are linked, in that they are related dimensions of psychological distance (Trope and Liberman 2010). For example, if climate change is perceived as temporally distant, it may also be perceived as more abstract and uncertain, and vice versa. This is a problem because consumers generally avoid uncertain future outcomes (Hardisty and Pfeffer 2016). Tangibility interventions such as vivid imagery, communicating specific actions and outcomes, and making impacts seem local and proximate can address both challenges at once. They make uncertain, abstract outcomes more concrete and certain, and they increase the vividness of future outcomes, bringing them psychologically into the present. In contrast, for environmental problems that are already concrete and present, such as littering or algal blooms, tangibility interventions may be unnecessary and ineffective. Therefore, we propose:

P17: Tangibility interventions are more impactful for distant and/or abstract (vs. more proximal) environmental issues.

 Furthermore, although people generally care less about future, abstract outcomes, this varies from person to person. People with higher “discount rates” do not care as much 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 not respond as much to tangibility interventions. Thus, future research might examine whether:

P18: Individuals with higher discount rates and/or low consideration of future consequences are more sensitive to the tangibility of environmental outcomes.

 Anecdotally, a popular technique for motivating green behavior is to advertise the collective impact, such as “If everyone in the United States washed their clothes with cold water instead of hot, we would save around 30 million tons of CO2 per year” (“Snappy Living” 2011). Despite the popularity of this type of messaging to promote green behavior, 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). While people are often insensitive to large numeric changes in environmental outcomes (Schkade and Payne 1994), such that “3 million” tons of CO2 would be treated the same as “300 million,” it may be that tangible representations that use visual images and analogies (such “a garbage heap the size of the Empire State Building”) might be effective:

P19: Tangible (but not intangible) collective-impact framing increases pro-environmental behavior.

 While the adoption of sustainable behavior often requires overriding an automatic habit with a controlled one, this may be short-circuited 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). Thus, we propose:

P20: Tangibility interventions shift people from analytic to experiential processing, and will therefore moderate the effectiveness of other interventions.

***Concluding Thoughts***

Above, we have highlighted potential gaps in the literature that we hope will lead to research developing more theoretical insights and promising directions for future study. One striking facet of the current review is that most of the existing research involves surveys or experiments taking place at one point in time (see Iyer and Reczek 2017). Future research could profitably examine the longitudinal effects of different interventions on sustainable consumer behaviors. Moreover, one dichotomy that is highlighted by our framework is short-term versus long-term focus. While 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. For example, while habit-formation tools and feelings and cognition tools that focus on in-the-moment behavior shaping can be effective in the situation, once they are removed sustainable actions can disappear. 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, etc.). Future research could test this possibility.

A question with practical, theoretical, and future research implications is whether our framework can be applied to other positive behaviors such as prosocial actions or health behaviors, or if the factors are unique to the domain of sustainable behaviors. We conjecture that many of the facets of our framework may apply to the domains of 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. While health-behavior change can collectively have positive economic and societal benefits (WHO 2015), health-behavior change also undeniably has benefits at the individual level(OECD and WHO 2015). In addition, while health behaviors and prosocial behaviors (e.g., charitable giving) both have issues with tangibility, we suggest that sustainable behaviors and outcomes are perceived as being even less tangible than health behaviors 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 sum, we have reviewed the behavioral science literature to outline five routes that can be leveraged to impact sustainable consumer behavior change. Stemming from our review, we developed the SHIFT framework, which highlights that the key drivers of pro-environmental consumer behaviors are related to social influence, habit, the individual self, feelings and cognition, and tangibility. We anticipate that the SHIFT framework will be helpful in guiding practitioners interested in fostering sustainable consumer behavior. Moreover, we hope that this framework will assist researchers in conceptualizing different means of influencing sustainable consumer behavior and spur further research in this essential domain.

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1. Steg and Vlek (2009) focus on three 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, but does not delve as deeply into issues linked to habit, the self-concept, cognition, or tangibility. We also contribute to the existing literature by highlighting novel theoretical propositions and directions for future research. [↑](#footnote-ref-1)
2. 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. [↑](#footnote-ref-2)
3. We note that we are using Our Horizon as an example of these concepts and we cannot make conclusions about their success yet. We thank Rob Shirkey for his permission to use Our Horizon as an example in this paper. [↑](#footnote-ref-3)