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SHIFT

Social influence | **H**abit formation | **I**ndividual self | **F**eelings and cognition | **T**angibility

A review and framework for

ENCOURAGING ECOLOGICALLY SUSTAINABLE CONSUMER BEHAVIOUR

WRITTEN FOR SITRA BY **KATHERINE WHITE** AND **RISHAD HABIB**

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SHIFT – A review and framework for encouraging environmentally sustainable consumer behaviour

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SITRA STUDIES is a publication series which focuses on the conclusions and outcomes of Sitra's future-oriented work.

Overview

In this report, we review the academic literature on encouraging ecologically sustainable consumer behaviours. We synthesise the literature in a meta-analytic fashion and outline a set of principles drawn from behavioural science (marketing, psychology, economics, etc.) that can be leveraged to shift consumer attitudes, choices and behaviours towards ecologically sustainable outcomes. Our analysis reveals a set of factors that reliably predict sustainable consumer behaviour. We organise these key factors based on the acronym **SHIFT**. People are more likely to change negative (and maintain positive) sustainable consumer behaviours when these factors are effectively considered and leveraged: **S**ocial influence, **H**abit formation, the **I**ndividual self, **F**eelings and cognition, and **T**angibility. Using this framework, we provide tools that practitioners can use to foster ecologically sustainable consumer behaviour.

Foreword

In Sitra's work to bring about more sustainable everyday living we have come across very many different models of consumer motivation and behaviour. They have all been good for making us think. But often their background information or practical applicability have been limited. What is needed is a practical tool to help companies and marketers choose how to promote sustainable alternatives to consumers.

A deeper understanding is needed. Extensive research on consumer behaviour exists, even specifically on the topic of sustainable consumption. This wealth of information provides a variety of viewpoints and a critical mass of empirical research for drawing conclusions.

We undertook an international search for teams of researchers that would gather and analyse this wealth of information and utilise it to create a practical tool for marketers. Kate and Rishad were our choice from teams comprising 68 different individuals, all of whom were wonderfully accomplished. This report and the accompanying workbook are the results of their hard work. The authors have dug through almost 400 different published, scientific sources on sustainable consumption and distilled the key lessons for us.

Success requires understanding customers, getting close to them and analysing their behaviour. This allows the creation of a solid communication strategy with clear and persuasive arguments that are valuable to the consumer.

It is our hope that this report will provide the reader with insights into the role sustainability plays for consumers, as well as a key tool for bringing sustainable alternatives to them. It also gives an idea of the wide range of different drivers of change a marketer can tap into – not just the need to be more sustainable, but other motivations such as status, health and enjoyment as well. The SHIFT framework is a practical tool for marketers to use when creating winning strategies for engaging customers.

Helsinki, 20 April 2018

MARKUS TERHO
Project Director

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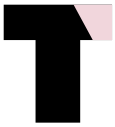
Contents



Glossary

Social influence

Social norm – an action or behaviour that is generally perceived to be common and socially appropriate in a given situation.

Theory of planned behaviour – a theory that shows how attitudes, subjective norms and perceived behavioural control affect behavioural intentions, which in turn predicts behaviour.

Attitude – refers to the degree to which a person is favourably inclined towards an action.

Perceived behavioural control – an individual's belief regarding whether he or she can actually do the required behaviour.

Subjective norm – the degree to which the consumer perceives that relevant others (friends, family, etc.) want them to engage in the behaviour.

Descriptive norm – a type of social norm which refers to what is commonly done by others; for example, 75% of your neighbours recycle.

Injunctive norm – a type of social norm which refers to information conveyed regarding what is commonly approved and disapproved of by others; for example, 75% of your neighbours think you should recycle.

Reactance – occurs when people feel their freedom is being threatened by an appeal or request, and, as a result, are motivated to do the opposite of what the message intended.

Social desirability – people's motivation to convey a positive image of themselves to others.

Social identity – the sense of self people derive from the social groups they belong to.

In-group identification – strength of the connection with a certain in-group.

Dissociative group – groups with which we wish to avoid being associated.

Block leader approach – this involves electing an individual within a neighbourhood (block) and asking them to persuade others to engage in a sustainable behaviour.

Habit formation

Habits – repeated actions that occur automatically without much conscious control or effort in stable contexts, such as in the same location or at the same time of day.

Cognitive burden – the amount of mental effort required to carry out an activity.

Discontinuity – changes in the stable contexts in which behaviour usually occurs.

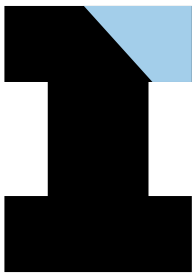
Self-regulatory resources – the limited supply of mental resources that are used up when individuals try to control their impulses.

Prompts – reminders of desired behaviour in verbal or written form near the place the behaviour is generally carried out.

Internal (or intrinsic) motivation – motivation to engage in a task or activity because of interest in and enjoyment of the behaviour itself.

External (or extrinsic) motivation – motivation to engage in a task or activity because of influences outside the individual, such as the prospect of gaining rewards or approval from others.

Comparative feedback – feedback that compares an individual's current behaviour to their own past behaviour or to other people's behaviour.



Individual self

Personal norms – feelings of personal obligation that are linked to one's own expectations and standards.

Norm activation theory – a theory about how the awareness of the negative consequences of private actions and a sense of personal responsibility or moral obligation leads to altruistic behaviour in line with personal norms. See Schwartz (1977) for more details.

Value-belief-norm theory – a theory that represents the causal chain through which personal values (e.g. altruistic values) lead to beliefs (e.g. beliefs about how humans can damage the environment) which activate personal norms (e.g. to conserve electricity). See Stern et al. (1995) for more details.

Self-concept – this is an individual's belief, thoughts and perceptions about themselves. This includes the person's personality, attributes and who and what the self is.

Self-affirmation – the recognition and endorsement of values that are important to the self.

Self-consistency – behaving in a manner that is congruent with one's self-concept.

Cognitive dissonance – having inconsistent thoughts, beliefs or attitudes which create a negative emotional state that the consumer is motivated to avoid.

Self-perception theory – a theory that states people often engage in consistent actions because they use a behaviour at one point in time to infer their true underlying attitude.

Implementation intentions – "if-then plans" where individuals specify the details related to goal fulfilment (how, when, where) and the actions they will take in order to help attain their goals.

Positive spillover – individuals who perform sustainably in one domain are more likely to perform positively in other sustainable domains as well.

Licensing effect – individuals who have performed or recalled behaving in a positive manner at one point in time will feel they have licence or an excuse to behave less positively at a later time.

Slacktivism – a phenomenon where engaging in a token, costless support behaviour (e.g., liking a Facebook page) at one point in time does not increase the tendency to engage in more meaningful helpful behaviours in the future.

Self-interest – actions are of benefit or advantage to the individual.

Self-efficacy – individual belief that they have the ability to engage in the desired behaviour and that this action can be effective in making a difference.

Degree of consumer compromise – the amount a consumer has to give up in order to purchase a product including paying a higher price, giving up other desirable attributes and engaging in more effortful behaviours.

Self-transcendent – this involves viewing oneself as being a part of something greater than the individual self.

Biospheric values – a value orientation that involves considering the consequences on nature of any action or behaviour.

Transtheoretical model – (also known as the stages of change model) describes the five stages through which individuals change their behaviour and is used to understand individuals' degree of readiness to change. These five stages have been labelled pre-contemplation, contemplation, preparation, action and maintenance

Feelings and cognition

Self-conscious emotions – emotions that are a result of seeing the self as responsible for outcomes.

Authentic pride – feelings of pride that are associated with a sense of purpose and the attainment of goals.

Group norm – a type of social norm that is common and socially appropriate in a given situation for a specific group.

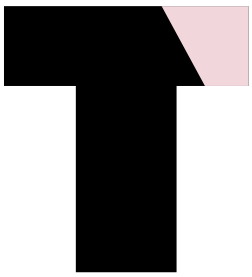
Individualistic countries – countries that focus on personal achievements and goals more than group goals and norms.

Collectivist countries – countries that focus more on group goals and norms than personal achievements and goals.

Appraisal tendency framework – a framework that explains how emotional responses arise from evaluations (or appraisals) of specific situations related to them.

Information overload – an effect where exposure to too much information or data can make it more difficult to make a decision or to understand an issue.

Individualised audits – a personalised review of an individual's energy usage.



Tangibility

Tangibility – the sense that something is real and substantial, including being close in time or distance, concrete and easy to imagine.

Proximal – feeling that something is close, either in terms of time or distance, by focusing on local and immediate consequences.

Distal – feeling that something is further away or distant in terms of time or distance.

Temporal focus – the focus individuals have on the past, present or future when they are thinking or making decisions.

Temporal discounting – the tendency for individuals to value current payoffs more so than future payoffs.

Dematerialisation – a concept of freeing oneself from the consumption of material and tangible goods, often towards immaterial and intangible goods such as digital goods, experiences or services.

Voluntary simplicity – a concept involving simplifying one's lifestyle and consumption patterns, which often involves a move away from material goods.

Sharing economy – a concept of sharing products rather than owning them, such as car-sharing or bike-sharing.

Liquid consumption – consumption that is characterised as being more ephemeral (not enduring), access-based (not ownership-based) and dematerialised (not physical), including digital and shared goods.

Introduction

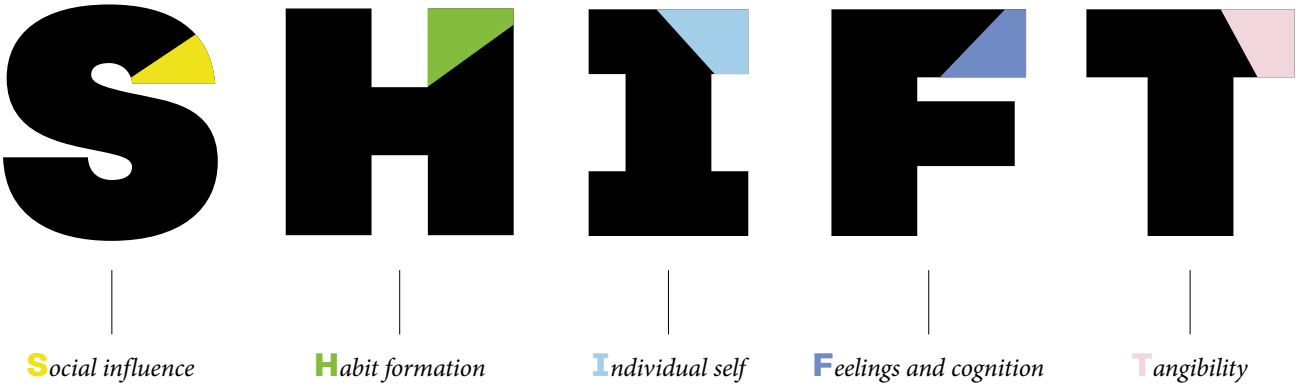
Consumer behaviour plays a pivotal role in the impact that human beings have on our planet (Stern 2000). Many of the greatest challenges that we face as a species are linked to our decisions regarding whether to consume, what to consume, how to consume and how much to consume. One estimate suggests that if the entire population of Earth were to consume like an individual from North America or Europe, we would need to harness the resources of almost four planets such as our own (McDonald 2017). Behavioural research examining the drivers of ecologically sustainable consumer behaviour has therefore become more prevalent and more important than ever before (Kotler 2011). From choosing options that have more sustainable attributes, to using products in more efficient ways, to changing our "throw away" mentality regarding consumer fashion and other goods, there are many ways in which our consumer behaviours can shift towards more ecologically sustainable outcomes.

When it comes to making decisions, consumers often fall short of their good intentions.

A common theme in the literature on encouraging ecologically sustainable consumer behaviour is that while consumers often self-report having positive attitudes and intentions towards sustainable consumption (Trudel and Cotte 2009), they do not always subsequently follow through with sustainable choices and behaviours (Auger and Devinney 2007; Devinney et al. 2006). Although attitude-behaviour discrepancies have been found in other domains as well (e.g. health behaviour change), the gap is notably pronounced in the domain of sustainable behaviour change (Boulstridge and Carrigan 2000; Kollmuss and Agyeman 2002; Young et al. 2010). This reported "attitude-behaviour gap" is arguably one of the biggest challenges for marketers, firms, non-profit organisations, and public policymakers wishing to encourage ecologically sustainable consumption (Prothero et al. 2011). Consumers want to do the right thing and they report valuing sustainability, but when it comes to making decisions about what products to purchase, how to use them and how to dispose of them, consumers often fall short of their good intentions.

The question addressed in this report is how can practitioners use what we know from behavioural science (e.g., the literature from marketing, psychology or economics) to reinforce these positive attitudes and encourage consumers to follow through with sustainable behaviours? We outline a set of principles drawn from behavioural science that can be leveraged to shift consumer attitudes and behaviours towards more ecologically sustainable outcomes. We base our analysis on the acronym **SHIFT,** which reflects the key concepts covered in the report. People are more likely to change negative (and maintain positive) sustainable consumer behaviours when communicators consider how **S**ocial influence, **H**abit formation, **I**ndividual self, **F**eelings and cognition, and **T**angibility can be appropriately harnessed.

EXHIBIT 1.
THE SHIFT FRAMEWORK FOR INFLUENCING ECOLOGICALLY SUSTAINABLE BEHAVIOURS



In the sections that follow, we introduce each principle, review the related research, and highlight how each of these principles can be leveraged to effectively shift consumers' attitudes, choices and behaviours in the direction of sustainability. Using this framework not only allows us to draw upon relevant theoretical findings from behavioural science, it also enables us to present a memorable and actionable way for practitioners to think about these key principles. Within each subsection, we highlight how practitioners can leverage the concepts in actionable ways to communicate the value of sustainable options and encourage sustainable choice, usage and disposal of products and services.

Ecologically sustainable behaviour encompasses consumer choices and actions that result in the use of fewer resources and a decrease in negative environmental impacts over the life cycle of the product or service. The focus of this report is on environmental sustainability. We note, however, that achieving greater environmental sustainability can often come with social and economic advantages (Chernev and Blair 2015; Savitz 2013). We examine the full consumption cycle, including: information search, decision-making, adoption, usage and disposal of products and services in more sustainable ways. By considering the full consumption cycle, we take a life-cycle approach to viewing the literature on ecologically sustainable consumer behaviour (Braungart, McDonough and Bollinger 2007). Thus, ecologically sustainable consumer behaviour could include decreased consumption or voluntary simplicity in the first place (Leonard-Barton 1981; Shaw and Newholm 2002), as well as actions such as choosing options with sustainable attributes (Luchs, Brower and Chitturi 2012; Pickett-Baker and Ozaki 2008), conserving resources during product use (Lin and Chang 2012) and implementing more sustainable disposal practices (White and Simpson 2013).

What makes ecologically sustainable consumer behaviours unique?

Given the serious environmental concerns that we are facing as a generation, ecologically sustainable consumer behaviour presents itself as an imperative concern for consumers, businesses and society (Kotler 2011). However, sustainable consumer behaviours have unique barriers that prevent

their adoption. According to Gifford (2011), one of the biggest barriers to sustainable behaviour change is ignorance. People either are not aware of the negative environmental impacts of certain behaviours or they are uncertain how to change their behaviours to make a positive impact. This implies that providing consumers with information and education is often a first step that needs to be taken to encourage positive, sustainable consumption behaviours. Importantly though, information alone is not usually enough (McKenzie-Mohr 2000; Nolan et al. 2008). Consumers often perceive products that are more sustainable to be weaker in other dimensions such as strength, effectiveness or attractiveness, which might lead them to opt for less environmentally friendly options and behaviours or to use higher quantities of the product than necessary (Lin and Chang 2012; Luchs et al. 2010; Luchs and Kumar 2017; Newman, Gorlin and Dhar 2014). Moreover, most sustainable behaviours involve some immediate cost, such as increased effort, financial cost or inconvenience, requiring a trade-off of these drawbacks for the individual for a more abstract, pro-environmental good that seems to have implications that are distant from the here and now (Reczek, Trudel and White 2018; White, MacDonnell and Dahl 2011). Because of this, it is sometimes difficult for consumers to see the immediate benefits to the self as a result of engaging in sustainable consumer behaviours. Given these drawbacks to engaging in sustainable consumption, it is worthwhile for practitioners to consider what barriers to behaviour change exist with regard to the specific consumer response they wish to influence (McKenzie-Mohr 2000; Peattie 1999).

One of the biggest barriers to sustainable behaviour change is ignorance.

Introduction to the SHIFT framework

Once the practitioner understands what specific consumer behaviour she or he wants to target and has uncovered potential barriers and benefits with regard to that behaviour, then the task is to use tools that will help to influence the consumption behaviour in ways that will overcome perceived barriers and highlight benefits (for more detail on how to use the framework, see the section entitled "How to use the SHIFT framework in practise"). We introduce a framework that presents five different factors that are powerful predictors of the tendency to engage in ecologically sustainable consumer behaviours. Next, we discuss how practitioners might use these principles – **S**ocial influence, **H**abit formation, **I**ndividual self, **F**eelings and cognition, and **T**angibility – to encourage meaningful sustainable consumer behaviour change. For each SHIFT factor, we highlight specific tools that the practitioner can use to influence sustainable consumption behaviours in positive ways.

Social influence

Social influence

Social factors have been shown to have a powerful influence on whether or not consumers engage in sustainable behaviours. Put simply, making a behaviour seem more socially approved of, more commonly engaged in by one's peers or socially desirable in some way makes it more likely to be adopted. We highlight three different tools for harnessing the power of social influence: social norms, social desirability and social group memberships. A meta-analysis of 29 studies looked at the effectiveness of different social influence factors and found that they had an overall small to medium effect size and were more effective than control, information, goal setting and feedback conditions (Abrahamse and Steg 2013). The most effective measures with the largest effect sizes were found to be the block leader approach (three studies) and public commitment (four studies), because of their face-to-face nature, while socially comparative feedback had a low effect size. The block leader approach involves selecting an individual within a neighbourhood and asking them to persuade others to engage in a sustainable behaviour, while public commitments involve asking for commitment in ways that are observable to other people. Importantly, the effect of social influence was found to be equally strong for both observable and non-observable behaviours.

Making a behaviour seem more socially desirable makes it more likely to be adopted.

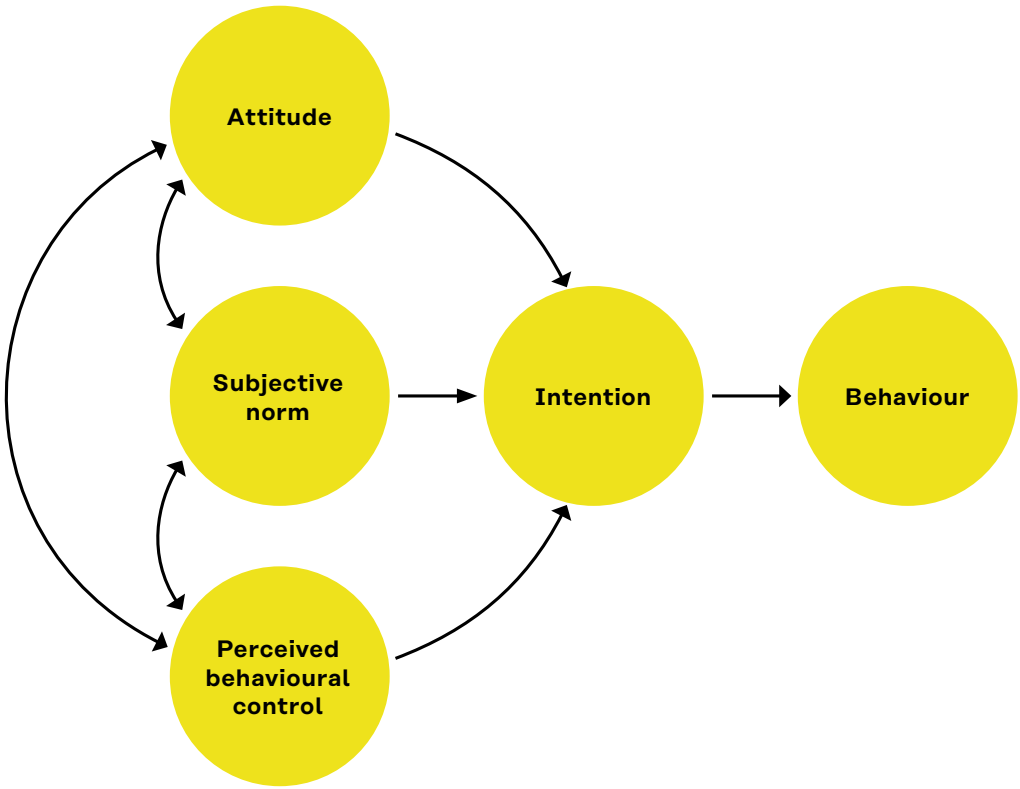
Social norms

A **social norm** refers to what is generally perceived to be common and socially appropriate in a given situation (Cialdini et al. 2006; Peattie 2010). For example, one compelling predictor of recycling behaviour is simply whether one's friends and neighbours recycle (Oskamp et al. 1991). Along similar lines, consumers are significantly more likely to adopt solar panel technology if others in their neighbourhood do (Bollinger and Gillingham 2012). Social norms have been shown to positively influence a range of sustainable behaviours such as recycling (Schultz et al. 2007), refraining from littering (Cialdini, Reno and Kallgren 1990), engaging in other forms of sustainable waste disposal (e.g. White and Simpson 2013), practising energy conservation (Dwyer, Maki and Rothman 2015; Goldstein, Cialdini and Griskevicius 2008), and making pro-environmental intentions and purchases (Kim, Lee and Hur 2012; Onel 2017).

One prominent theory that has looked at the predictive role of social norms in determining sustainable consumer behaviours is the "theory of planned behaviour (TPB)" (Ajzen 1991; Han and Stoel 2017; Onel 2017). According to TPB, the most powerful determinant of actual behaviour is the individual's intention to perform the behaviour. Importantly, there are three key predictors of intention: the person's attitude towards the behaviour, perceived behavioural control and subjective norms (please refer to Exhibit 2). **Attitude** refers to the degree to which the person is favourably inclined towards the action, and **perceived behavioural control** refers to whether the person believes that he or she can actually do the required behaviour. **Subjective norms** refers to the degree to which the consumer perceives that relevant others (friends, family, etc.) want them to

engage in the behaviour. Research shows that TPB reliably predicts sustainable actions across a range of consumer behaviours including transportation choice (Harland, Staats and Wilke 1999; Heath and Gifford 2002), green hotel choice (Han and Kim 2010; Teng, Wu and Liu 2015), purchasing organic and sustainably sourced food (Dowd and Burke 2013; Vermeir and Verbeke 2008), purchasing fair-trade products (Shaw and Shiu 2002), making disposal choices (Kaiser and Gutscher 2003; Mannetti, Pierro and Livi 2004) and purchasing sustainable apparel (Han and Chung 2014). Importantly, a meta-analytic review of 30 studies in this domain concluded that TPB does consistently predict socially responsible consumer behaviours and it is the subjective norms factor that has a strong influence on sustainable intentions, which then has the largest effect on actual behaviour change (Han and Stoel 2017).

EXHIBIT 2.
THEORY OF PLANNED BEHAVIOUR



In clarifying the role of social norms in determining sustainable attitudes and behaviours, Cialdini, Reno and Kallgren (1991; 1990; Reno, Cialdini and Kallgren 1993) point out that social norms are best divided into two categories. The first is **descriptive norms**, which refers to information conveyed regarding what is commonly done by others. The second is **injunctive norms**, which refers to information conveyed regarding what is commonly approved and disapproved of by others. That is, descriptive norms refer to what is actually done (e.g., "75% of your neighbours are recycling their electronics") and injunctive norms refer to norms of what ought to be done (e.g., "Your neighbours think you should be recycling your electronics"). Descriptive norms (De Leon and Fuqua 1995; Nolan et al. 2008; Schultz

1999) and injunctive norms (Reno et al. 1993; Schultz et al. 2007a) can both influence sustainable behaviours.

A relevant question is: What type of norm works best in encouraging sustainable consumer behaviours? It is worth noting that injunctive norms can sometimes backfire if they seem too preachy, demanding or threatening to consumers' feelings of having the freedom to make their own choices (White and Simpson 2013). If the injunctive norm is perceived by the consumer as being too demanding or controlling, this can lead to a backfire effect – called **reactance** – wherein consumers are motivated to do the opposite of what the message intended (Brehm 1966; Brehm and Brehm 2013; White and Simpson 2013). Indeed, a recent study found that very assertive, injunctive statements (e.g., "Reducing air pollution: everyone must use more public transportation!") can lead to negative consumer reactions. However, if consumers believe the behaviour-change domain is important, the effect is reversed and they exhibit more positive reactions to injunctive versus non-injunctive statements (Kronrod, Grinstein and Wathieu 2012).

Work on descriptive norms shows that they can be significantly more powerful than factors that people intuit as being compelling motivators of sustainable behaviour change, such as providing information, communicating a pro-social or environmental appeal, or appealing to self-interest (Nolan et al. 2008). Research examining descriptive norms shows that such norms work best when combined with an injunctive message (Schultz et al. 2007a), with a commitment to comply (De Leon and Fuqua 1995), or with reference to a particular setting (e.g., Fornara et al. 2011; Goldstein et al. 2008). For example, Goldstein and colleagues (2008) examined energy conservation in hotel rooms, looking at how different types of normative messages influence consumer willingness to save energy by reusing their towels. They found that using descriptive norms led people to be more likely to take part in the programme. When participants learned that 75% of "fellow guests", "fellow citizens" or "men and women" had taken part in the programme, they were significantly more likely to take part themselves compared to when the typical "help the environment" message was shown. Interestingly, the most positive reactions emerged in response to learning that people who stayed in the same hotel room had taken part in the energy conservation programme. People are persuaded by descriptive norms when they come from a similar context or similar others (Reese, Loew and Steffgen 2014). Finally, research shows that descriptive norms work best when the norm can be presented as a behaviour that a large majority of people are actually engaging in (Cialdini 2003; Schultz et al. 2007a). If the norm suggests that people are not engaging in the sustainable behaviour or that people are in fact engaging in an undesired behaviour, the use of a descriptive norm may backfire, leading to an increase in undesirable behaviours (e.g., Cialdini 2003; Cialdini et al. 2006). Please see Exhibit 3 for an example of influencing sustainable behaviour through the use of norms.

EXHIBIT 3.

SOCIAL NORMS IN ACTION

We were asked by the City of Calgary to encourage consumers to dispose of waste more sustainably by allowing both food waste and garden waste to decompose naturally (e.g., composting and grasscycling, respectively). We followed the steps outlined in **Exhibit 13** (on page 53), and after clarifying the behaviours we wished to change, we collected in-depth interview data from city residents. The results showed that people saw the costs to the self related to participation as greatly outweighing the benefits. Interestingly, the barriers mentioned were not about time or effort to change their behaviours, but instead were about social factors: "None of my neighbours are engaging in these behaviours, what will they think if I do them?"; "Will my lawn look messy or my kitchen scraps lead to negative reactions from others?"

As soon as we saw these results, we realised that we had to a) appeal to social norms and benefits appropriately and b) make the communication relevant to the self. We reasoned that how people respond to social norms versus information about benefits might depend on whether the consumer was focused on the individual self or others in their community. We conducted a large-scale field experiment where different households (676 of them) received different marketing messages.

We varied two things in a marketing communication that was delivered to residents in the form of a door-hanger (on recycled and recyclable paper). First, we varied whether residences received an injunctive appeal (highlighting what others think one should do), a descriptive appeal (highlighting what others are doing), or a benefit appeal (highlighting the self-benefits of the action) to engage in these sustainable waste-disposal behaviours. Second, we varied whether the communication reinforced the individual self ("Think about how **you as an individual** can make a difference") or the collective self ("Think about how **we as a community** can make a difference").

We took a pre-test measure of how many bags of grass were left out for the landfill, employed our intervention (as above) and then took a post-test measure of how many bags of grass were left out for garbage collection. The results of our study showed that when the collective level of self was activated, injunctive and descriptive normative appeals were most effective, whereas benefit appeals were less effective in encouraging sustainable behaviours. When the individual level of self was activated, self-benefit and descriptive appeals were effective. We found that descriptive norms were the most resistant to negative responses overall, and that this was in part because they provided information about these behaviours that were (at the time) novel and that people were uncertain about. (See White and Simpson 2013 for full details of this project.)

Takeaways:

- Combine social norms with phrases that activate thoughts of the group or the community.
- Combine information about self-benefits with phrases that activate thoughts of the individual self.
- Descriptive norms are most effective across situations, as long as they convey that others are doing the desired behaviour.
- Descriptive norms work well under conditions of novelty, ambiguity or uncertainty.

(White and Simpson 2013)

Social desirability

A second social influence tool is to activate **social desirability**. The insight here is that people generally are motivated to convey a positive image of the self to others (Goffman 1949; Leary and Kowalski 1990; Schlenker 1980). In the domain of sustainability, consumers have been shown to select high-investment sustainable options (e.g., hybrid versus luxury vehicles) for reasons of conveying social status to others (Griskevicius, Shiota and Nowlis 2010; Sexton and Sexton 2014) and to choose options with prosocially positioned attributes to appear positively to others (Green and Peloza 2014; White and Peloza 2009).

Asking a person to make a public commitment increases the likelihood of that person actually engaging in that action.

One interesting facet of social-desirability motivations is that people are more likely to want to put forth positive impressions to others in public contexts where they anticipate that others might evaluate their actions (Ratner and Kahn 2002; White and Dahl 2006). Research shows that public contexts lead consumers to choose options with sustainable attributes, such as sustainably sourced and organic food products, as well as green technological products (Green and Peloza 2014; Grolleau, Ibanez and Mzoughi 2009; Peloza, White and Shang 2013). In addition, Pederson (2000) finds that people are more likely to exhibit sustainable consumption behaviours in domains where their behaviour is visual and tangible because this can provide a positive signal to others. Social desirability, then, can be used as a tool in contexts where the focal consumer behaviour is likely to be observed by others.

Another way to leverage social desirability is to ask for public commitments to engage in sustainable consumer behaviours in public settings. Research shows that asking a person to make a public commitment to engage in a future sustainable behaviour increases the likelihood of that person actually engaging in that action. Research on the foot-in-the-door effect shows that people are more likely to comply with a pro-social request after they have previously made a commitment to a smaller yet related request (Burger 1999; Freedman and Fraser 1966). For example, if you asked a customer to first answer a few questions about energy conservation, he or she would be more likely to comply with a second request – to test out a new energy-efficient phone or hair dryer for a week. Moreover, simply making a commitment to support the cause or firm, or to engage in a future behaviour, makes people more likely

to follow through later on. Such commitments are most effective when they are made in public contexts (Burn and Oskamp 1986; Gonzales, Aronson and Costanzo 1988; Lokhorst, van Dijk and Staats 2009; Schultz, Oskamp and Mainieri 1995) and when they are combined with performance feedback (De Leon and Fuqua 1995). In one example, consumers who made a commitment to take part in an energy conservation programme and wore a publicly displayed symbol of their commitment (a pin) were the most likely to take part in a hotel energy conservation programme (Baca-Motes et al. 2012). Thus, practitioners should make the sustainable behaviour they wish to promote something that is visible to others, that is socially approved of and that consumers have been asked to make a public commitment to.

Other work shows that sometimes consumers who engage in sustainable behaviours are judged negatively by others (Antonetti and Maklan 2016; Brough et al. 2016; Olson et al. 2016; Sadalla and Krull 1995; Shang and Peloza 2016). Given this, people can be hesitant to engage in sustainable consumer behaviours if they feel that they will project an undesirable self-image to others (Brough et al. 2016; Sadalla and Krull 1995). For example, being seen as "eco-friendly" is perceived by some people as being feminine, which leads them to judge males who engage in sustainable behaviours more negatively. This can make males hesitant to be seen by others as caring about sustainability (Brough et al. 2016). Thus, marketing practitioners would do well to make a new sustainable product, service or behaviour something that looks positive to others and to ensure that it does not carry any negative associations.

Social group memberships

A third tool related to to social influence is that of leveraging social group memberships. Many psychological theories highlight the notion that people want to have positive views of their own **social identities**, which refers to the sense of self derived from the social groups that they belong to (Tajfel and Turner 1986; Turner 1985). For example, one could have a sense of social identity linked to one's occupation, interests, beliefs or status as a mother, an accountant, a Finn or a soccer player. One implication of this is that people wish to fit in with what other in-group members are doing (e.g., White et al. 2009) and will be more likely to engage in sustainable consumer behaviours if relevant or similar reference-group members are performing the behaviour (Goldstein et al. 2008; Welsch and Kühling 2009). For example, seeing the self as part of the environmental in-group is an important determinant of green purchasing behaviour and environmental activism (Fielding et al. 2008; Gupta and Ogden 2009). Indeed, one meta-analysis found that seeing the self as belonging to a relevant social identity predicts sustainable intentions and behaviours over and above elements of the theory of planned behaviour (Han and Stoel 2017). In addition, seeing a request to engage in a sustainable consumer behaviour as coming from an in-group member or reflecting benefits for a shared in-group identity can increase sustainable intentions and reactions to engaging in sustainable consumption behaviours (Samuelson, Peterson and Putnam 2003; Schultz and Fielding 2014).

Another implication of social group memberships is that social identity effects are more pronounced among those who have a stronger sense of connection – or **in-group identitifcation** – with the given in-group. For example, research has found that having a strong sense of identification with being "an organic consumer" predicts organic product purchasing behaviours (Bartels and Onwezen 2014; Bartels and Reinders 2010). Furthermore, identification with the in-group leads to increases in sustainable behaviours that are seen positively by the in-group such as recycling (White et al. 2009). Finally, previous work has shown that there are different elements to identification;

and it appears that the "self-investment" component of in-group identification (which reflects the self-perceived importance and satisfaction with the in-group) is most predictive of sustainable consumption behaviours linked to mitigating carbon emissions (Masson and Fritsche 2014).

A third implication of social group memberships is that we are motivated to view our own in-groups positively (Rabinovich et al. 2012). One ensuing consequence is that we do not like to see our own in-group outperformed by other groups (e.g., Ferguson, Branscombe and Reynolds 2011; White, Simpson and Argo 2014). This is particularly true of groups for which we hold negative associations, which have been referred to as **dissociative groups** (White and Dahl 2006). One line of research examined people's willingness to engage in sustainable behaviours such as composting, water conservation and recycling (White et al. 2014); this study documented that when consumers found that a group that was somewhat disliked performed well on a positive, sustainable behaviour, the focal group members would increase their own positive behaviours. For example, when business students learned that computer science students (a group that was viewed as being "dissociative") were composting more than them, the business students more than doubled their rate of composting. This effect was heightened under public conditions because the social self is most relevant in such a context. Thus, for certain types of sustainable behaviours, friendly challenges could be set up between competing groups (Vugt, Griskevicius and Schultz 2014). These could be two competing universities, organisations, business units, cities, provinces or even neighbourhoods. Fostering a sense of pride in one's own group's positive performance is certainly a viable means to encouraging ecologically sustainable consumer behaviours. Please refer to Exhibit 4 for a summary of the behaviour change tools related to social influence.

EXHIBIT 4.
TOOLS: SOCIAL INFLUENCE

TOOL 1 — **Social norms**	• Use social norms to communicate what others are doing and approve of the desired sustainable consumer behaviour. • Show relevant others or in-group members using the product or service, or engaging in the sustainable action.
TOOL 2 — **Social desirability**	• Have the desired action be something that is performed in social contexts, especially if it is viewed positively by others. • Create socially desirable (and avoid undesirable) associations with the product, service or prosocial action.
TOOL 3 — **Social group memberships**	• Associate the sustainable product, service or behaviour with a positively viewed in-group. • Consider fostering healthy competition between groups to encourage sustainable actions.

H*abit formation*

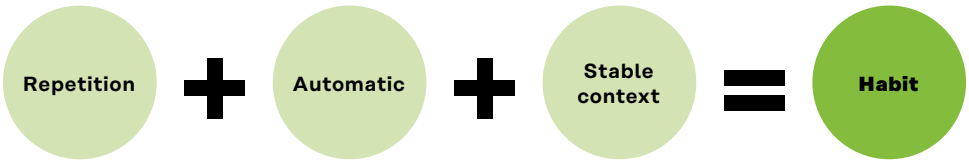
Habit formation

If ecological consumer choices, usage and disposal of products and services can become habitual, these actions are more likely to be adopted and continued into the future. We first address the nature of habits and then draw upon work in psychology, marketing and economics to outline factors that can break bad habits (discontinuity and penalties) and build positive habits (making the task easy, using prompts, using incentives and giving feedback).

The nature of habit formation

Habits form slowly over time through repeated action. They are then likely to recur automatically without much conscious control or effort in stable contexts, such as the same location or time of day (Verplanken and Aarts 1999). For instance, most people brush their teeth every single morning without really thinking about it or putting much effort into it. Some changes in behaviour are the result of one-off actions such as reducing energy usage by buying energy-efficient lights. On the other hand, repeated actions are likely to be habitual, such as reducing energy usage by turning off the lights when you leave the room. The habits people develop are likely to be carried with them for the rest of their lives and repeated consistently over time. However, for many people the habits they have developed are not in line with notions of sustainable behaviour and consumption (Verplanken 2011).

EXHIBIT 5.
STEPS IN THE HABIT-FORMATION PROCESS



The key to forming habits is repetition; when an action is successfully repeated multiple times, it is more likely to become habitual.

Behaviour that requires high levels of processing power such as complex analysis is unlikely to become a habit.

Behaviour that requires high levels of processing power such as complex analysis is unlikely to become a habit. This is because the second key feature of habit is automaticity; habitual behaviour is characterised by a low **cognitive burden**, and a lack of awareness and conscious intent, as well as difficulty in controlling the action or thought. Behaviours can become habitual without much thinking, and this is partly due to environmental cues. The last key feature of habit is a stable context; habitual behaviours tend to occur in the same time and place (Verplanken and Aarts 1999).

Habits are strong predictors of behaviour, often more so than conscious intentions. Habits have been shown to be very important in predicting sustainable behaviours (Biel, Dahlstrand and Grankvist 2005; Knussen and Yule 2008). Many of the domains in which sustainable behaviours are

often encouraged – such as transportation, shopping, leisure activities, disposal and water use – are strongly habitual (Verplanken and Roy 2016). With enough regular repetition these new behaviours can become automatic. They can be encouraged with prompts, incentives and feedback. The following sections highlight how we can shape habits by decreasing undesirable behaviours and increasing positive ones.

When contexts are less stable people are more likely to increase their eco-friendly behaviours.

Discontinuity to change bad habits

The main tool to break habits is based on the habit **discontinuity** hypothesis, which involves changes in the stable contexts that automatically engage habitual behaviours. If the context in which habits arise and/or are carried out breaks or becomes unstable, it is more difficult for people to automatically carry out behaviours. Thus a changed context can promote the use of conscious decision-making, leading to better conditions for people to change their existing habits. Previous studies have shown that during big life changes, when contexts are less stable, people are more likely to increase their eco-friendly behaviours (Bamberg 2006; Thøgersen 2012; Verplanken et al. 2008; Walker, Thomas and Verplanken 2015). One study examined 800 households who had either recently moved or not moved. Half the participants were then given the intervention, which consisted of an interview, a selection of sustainable items, information and a newsletter. The researchers found that people who had moved within the last three months were more likely to engage in environmentally friendly behaviours after the intervention (Verplanken and Roy 2016). Although informational campaigns have found it difficult to change strong habits, combining them with context changes can greatly improve effectiveness.

Penalties

Another means of changing existing bad habits is to impose penalties or punishments to discourage undesirable behaviours. Examples of penalties include fines, tariffs and taxes on unsustainable consumer behaviours. Some research suggests that fines can be effective in domains such as adhering to appropriate waste disposal practices (Fullerton and Kinnaman 1995). In addition, strong habits (e.g., driving petrol-powered vehicles) can sometimes be decreased to some degree by a form of tax or tariff (Krause 2009). Although penalties can work in some instances, they can also have adverse effects, potentially leading to consumer backlash if they seem harsh or unreasonable (Fullerton and Kinnaman 1995). Moreover, once penalties are removed, the undesired behaviour can return (Scott et al. 2015). In addition, penalties can be difficult to enforce and monitor, which might be a reason to not employ them (Bolderdijk, Lehman and Geller 2012). While penalties can be effective in some cases, it might be more effective to use positive habit-formation techniques because penalties can lead to negative effects and defensive responses (Bolderdijk et al. 2012; Geller 2002; Steg and Vlek 2009). We next turn to positive habit-formation tools such as making it easy, prompts, rewards and feedback.

Making it easy

One common barrier to engaging in sustainable consumer behaviour change is that some sustainable behaviours can seem to be effortful, difficult or time-consuming (McKenzie-Mohr 2000). Thus, anything that can make the desired sustainable action seem easier to do can increase the chances that it will become a habit that consumers are willing to adopt and maintain. Making things easy to do, such as moving recycling bins to accessible locations and providing shower heads that can be set to low-flow, does lead to

more sustainable usage and disposal behaviours (Brothers, Krantz and McClannahan 1994; Ludwig, Gray and Rowell 1998). Moreover, residential recycling programmes that do not require sorting are much more likely to lead to participation (Gamba and Oskamp 1994). Likewise, making unsustainable consumer behaviours more difficult to do, such as decreasing the convenience of accessing elevators, can decrease such actions (Houten, Nau and Merrigan 1981). Other work suggests that even communicating messages in ways that are easy to understand can make the behaviour itself seem easier, leading to long-term, habitual behaviour change (White et al. 2011).

One effective way to make sustainable behaviours easy to do is to set them as the default option (Frederiks, Stenner and Hobman 2015; Pichert and Katsikopoulos 2008; Theotokis and Manganari 2015). Defaults take advantage of the fact that people are likely to stick to the status quo (i.e. inertia) because it is the easiest option, or the fact that the default appears to be an endorsed or approved option, and it is a reference point that people might not wish to move away from (Frederiks et al. 2015). For example, if green electricity is the default option, consumers are significantly more likely to opt for and stick with the sustainable option (Pichert and Katsikopoulos 2008). Thus, making it easy by altering elements in the physical setting or setting the desired behaviour as the default can set the stage for positive habit formation. Another strategy is to make sustainable products easy to access and noticeably placed on shelves so that consumers can select them automatically. Because consumers are often cognitively taxed and low on **self-regulatory resources**, making it easier for sustainable choices to become the automatic choice can be beneficial (Steg 2015).

Prompts

Another tool for encouraging consumers to engage in sustainable behaviours and making them habitual over time is the use of prompts. **Prompts** involve verbal or written antecedent messages that remind consumers what the desirable target behaviour is (Lehman and Geller 2004). In everyday life, for habitual and simple behaviours, prompts may be effective in positively influencing a wide range of sustainable consumer behaviours, including recycling and waste disposal (Austin et al. 1993; Krendl, Olson and Burke 1992; Oskamp et al. 1991; Werner, Rhodes and Partain 1998) and energy usage (Bekker et al. 2010; Luyben 1982; Winett 1978). However, a meta-analytic review of 156 published studies involving more than 500,000 participants looked at the effect of energy-saving tips in the form of alerts or prompts (Delmas, Fischlein and Asensio 2013) and concluded that such low-involvement prompts were not on their own a very effective strategy. Higher-involvement strategies such as home audits or consulting were more effective at reducing energy use.

Geller et al. (1982) identified the conditions under which prompting strategies work best. They emphasise that prompts are most effective when the prompted behaviour is easy to carry out, well defined and occurs close in time to the prompt message. Werner, Rhodes and Partain (1998) improved polystyrene recycling rates by using more effective prompts that were larger, well placed and clear. A comparable intervention in two academic departments of a large university found similar results; by placing a clear sign to recycle above the recycling bin and a clear sign to throw away trash above the trash bin, detailing which items could or could not be recycled, the authors found that recycling behaviour improved by 54% in one department. Moving the signs four metres away reduced this effect to 17% in the second department (Austin et al. 1993). Prompts are often a good starting point as a strategy because they are cost-effective and easy to employ (Schultz et al. 1995).

Incentives

Rewards, discounts, gifts and other incentives serve to stimulate and increase desired behaviours and positive habit formation. For example, monetary incentives can be used to encourage the adoption and maintenance of sustainable behaviours; they can be in the form of rewards such as rebates, tiered pricing and cash (e.g., Slavin, Wodarski and Blackburn 1981; Wilhite and Ling 1995). Incentives can influence sustainable behaviours such as bus usage (Everett, Hayward and Meyers 1974), waste disposal and clean-up (Baltes and Hayward 1976) and energy consumption (Abrahamse et al. 2005). Moreover, incentives have been shown to sometimes be more effective in encouraging behaviour change than providing information only (Diamond and Loewy 1991), prompting (Needleman and Geller 1992) and group commitment (Wang and Katzev 1990).

Despite the benefits of incentives, there are some potential drawbacks to using these types of reinforcement. First of all, rewards need to be substantial and motivating enough to catch the interest of the target audience. For example, larger monetary rewards such as rebates for major purchases (e.g., energy-efficient appliances) may be effective. Small monetary rewards can be less enticing than other types of rewards such as a free gift or entry into a raffle or lottery (Chen et al. 2010; Hutton and McNeill 1981). Second, research in the domain of sustainable change shows that behaviours that are influenced by rewards are often very short-lived (Katzev and Johnson 1984). People respond to the short-term rewards, but once the incentive is gone, so is the behaviour (Cairns, Newson and Davis 2010; Chen et al. 2010). This often occurs under circumstances where the reward provides an **extrinsic motivator** that "crowds out" **internal or intrinsic motives** to engage in the behaviour. As a result, the behaviour does not become a habit. Thus, while incentives and rewards are good for encouraging one-time behaviours, they may not always serve their purpose for positive habits that last over the long term (Geller 2002). Third, the imposition of reward as an external motivator may reduce internal, pro-social motivations to engage in the behaviour (Bowles 2008; Lepper and Greene 1975). Some research has even found decreases in the desired behaviours as a result of incentives (Delmas, Fischlein and Asensio 2013). Taking all of the literature together, the overall conclusion regarding incentives is that monetary incentives are not always effective in influencing sustainable consumer behaviours and may be most effective when they are more substantial. In general, non-monetary incentives or those that offer the possibility of larger rewards have been shown to be most effective.

People respond to short-term rewards, but once the incentive is gone, so is the behaviour.

Feedback

An additional tool to help people build positive habits is feedback, which refers to providing information about their performance on a sustainable task or behaviour. Feedback has been studied for its effect on performance and reaching goals, where it is described as a mechanism that directs attention to a specific goal (Kluger and DeNisi 1996). Feedback to encourage environmentally friendly behaviours commonly informs participants about their own energy use, sometimes in comparison to past use or compared to other people (e.g., Abrahamse et al. 2007; Fischer 2008; McCalley et al. 2006). Most consumers do not have an accurate idea of how much energy they are using, and so regular feedback can help make them act more sustainably.

Giving feedback has been shown to be useful in domains such as energy

consumption (Kim, Hong and Magerko 2010) and water conservation (Aitken et al. 1994; Gregory and Leo 2003). There are many ways in which feedback can be shared with people, and several factors influence how effective the feedback is. Feedback is most effective when it is given over a long time, is presented clearly and appealingly, and uses digital interactive tools (Fischer 2008). Consumers themselves state that they value information related to long-term costs, breakdown by appliance and comparison with their own past consumption (Karjalainen 2011). A meta-analysis of 156 field studies from 1975 to 2012 examining the effects of information strategies on encouraging energy conservation found that providing proper feedback is a strategy capable of reducing energy use (Delmas et al. 2013). Some 75.6% of the studies (117 studies) looked at the effect of feedback on energy usage; about 24% of all studies used **comparative feedback** strategies and 22% used real-time feedback strategies. Individual usage feedback actually resulted in a decrease in energy usage in 12 studies and a significant overall increase in energy usage and was more effective than comparative feedback. It is noteworthy that some studies have found that comparative feedback can backfire, leading to decreases in energy conservation, if the comparison suggests that the focal consumer is already performing well at the task (Delmas et al. 2013; Schultz et al. 2007).

Digital meters for measuring electricity, gas and water consumption are now commonplace, and new technology makes it possible to provide more customised, real-time feedback in an attractive way. Household appliances that give real-time feedback help reduce energy use. It is important, though, that consumers have an energy conservation goal to start off with, or else feedback will not be as effective (McCalley 2006). Real-time feedback is especially effective, as it allows people to link their results to their actions during the day and adjust actions promptly (e.g., Carrico and Riemer 2011; Schultz et al. 2007). Real-time feedback is effective as long as it is provided; however, once it is removed the reductions in energy usage often disappear (e.g. Matsukawa 2004; Sexton, Johnson and Konakayama 1987; Van Houwelingen and Van Raaij 1989). In addition to feedback regarding individual usage levels, studies have also looked at the effect of sharing group or comparative feedback with households (e.g., Carrico and Riemer 2011; Schultz et al. 2007). In work contexts, employees who received comparative feedback comparing their unit with two other units saved more energy than those who only received feedback regarding their own group. (Siero et al. 1996). Please refer to Exhibit 6 for tools related to habit formation and change.

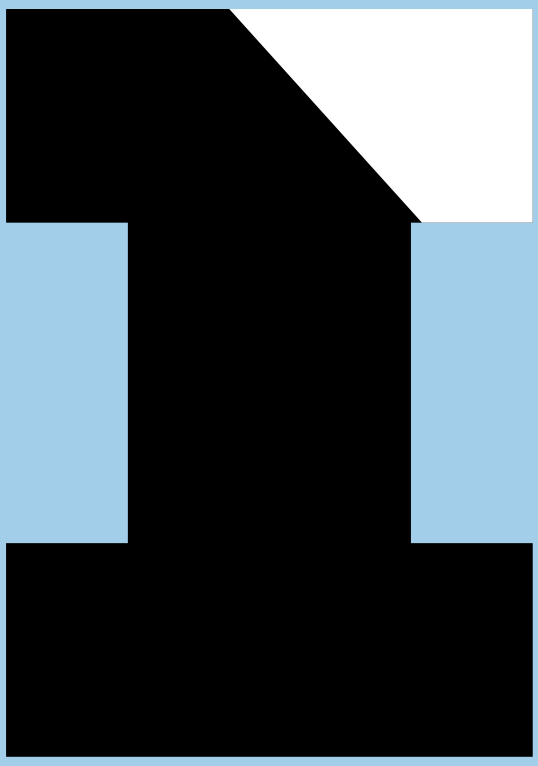
EXHIBIT 6.
TOOLS: HABIT FORMATION

TOOLS TO BREAK BAD HABITS

TOOL 1 — **Discontinuity**	• Ask people to change their habits during context shifts: big moves such as house relocation, starting a new job, etc. are a good time to try to get people to start new habits.
TOOL 2 — **Penalties**	• Consider using penalties only if you can monitor and enforce the programme. • If you use penalites, don't use penalties that are considered to be extreme or unfair.

TOOLS TO FOSTER GOOD HABITS

TOOL 1 — **Make it easy**	• Make the sustainable behaviour less costly, less effortful or easier to do. • Set green behaviours and options to be the default choice.
TOOL 2 — **Incentives**	• Provide non-monetary incentives such as gifts or tokens and/or large monetary incentives such as the chance to win prize money. • Be careful when giving monetary incentives because this can backfire if the savings are small and can discourage altruistic motives.
TOOL 3 — **Prompts**	• Use prompts to remind people to engage in the desired sustainable consumer behaviour. • Ensure that prompts are noticeable, clear and in close proximity to where the actual behaviour will be carried out.
TOOL 4 — **Feedback**	• Give frequent and regular feedback over a long time. • Present the feedback clearly and appealingly. • Provide individualised real-time feedback when possible rather than comparative peer feedback when in a non-group setting.



Individual self

Individual self and ecologically sustainable consumer behaviour change

This section highlights the importance of the individual self when attempting to shift people towards engaging in sustainable consumer behaviours. The tools highlighted in this section include personal norms, self-consistency, self-interests, self-efficacy and individual differences.

Personal norms

Several theoretical perspectives in academic literature highlight the importance of **personal norms** – feelings of personal obligation that are linked to one's self-expectations and self-standards – in determining sustainable consumer behaviours (Bamberg and Möser 2007; Jansson, Marell and Nordlund 2010; Peloza et al. 2013; Schwartz 1977; Stern and Dietz 1994; Stern, Dietz and Black 1985; Widegren 1998). For example, the **Norm activation theory** (Schwartz 1977) and the **Value-belief-norm theory** (Stern et al. 1995) both propose that people who have a moral belief activated (e.g., that environmental conditions pose threats to other people, other species or the biosphere) and believe that actions they initiate could decrease those negative consequences are the most likely to change their consumption behaviours to be more sustainable (see Harland, Staats and Wilke 2007; Klöckner 2013; Stern 1999). Work in this domain has shown that when people hold the strong personal norm that sustainability is a moral obligation, they are more likely to engage in pro-environmental actions such as energy conservation (Black, Elworth and Stern 1985), consumer recycling (Guagnano, Stern and Dietz 1995), paying a premium for pro-environmental goods and services (Guagnano, Dietz and Stern 1994; Stern, Dietz and Kalof 1993), choosing sustainable food sources (Widegren 1998) and other types of sustainable consumer behaviours. Research also shows that personal norms can have a greater impact on sustainable consumer behaviours when the consumer attributes some degree of responsibility to the self, trusts the organisation and foresees negative consequences associated with not engaging in the behaviour (Osterhus 1997). One meta-analysis, on studies that measured personal norms, found that these moral norms predicted sustainable intentions and behaviours over and above elements of the theory of planned behaviour (subjective norms, attitude and perceived behavioural control; Han and Stoel 2017).

Personal norms can imply that the individual has an obligation to engage in sustainable behaviours or a belief that, instead, it is others who should modify their behaviours.

Importantly, personal norms can imply that the individual has an obligation to engage in sustainable behaviours or a belief that, instead, it is others who should modify their behaviours (Stern 2000). Thus, personal norms can either enhance or impede sustainable consumption behaviours, depending on the specific nature of the norm (Press and Arnould 2009; Thøgersen 2005). One implication of the research on personal norms is that it makes sense to appeal to those with strong personal norms in favour of sustainable action when promoting a sustainable product, service or behaviour. Research also implies that it is possible to

remind or to situationally "prime" people to think about their personal, pro-environmental standards in ways that make them more likely to choose sustainable options (Peloza et al. 2013; Verplanken and Holland 2002). For example, a reminder of a time when the individual did not act consistently with their pro-environmental beliefs can lead to more sustainable behaviours (Peloza et al. 2013) or reminding people of important environmental values can make people more likely to consider environmental criteria when making choices (Verplanken and Holland 2002).[1]

Positivity of the self-concept

Work in social psychology demonstrates that people are generally motivated to maintain positive views of the **self-concept** (Sedikides, Gaertner and Toguchi 2003; Taylor and Brown 1988; Tesser 2000). Likewise, our consumption attitudes and behaviours can support and reaffirm our positive beliefs about ourselves (Dunning 2007). In the domain of sustainable consumption, consumers demonstrate self-defensive reactions to threatening information regarding the self's own behaviours and negative environmental impacts. Consumers can show denial and rationalisation responses to learning about the negative impacts of their own consumption (Dickinson 2009; Feygina, Jost and Goldsmith 2010) and will denigrate other consumers who demonstrate more sustainable behaviours because of an identity threat (Zane, Irwin and Reczek 2016). Moreover, threats to self-identity (e.g., threats to masculine identity) can lead to decreases in sustainable intentions and behaviours (Brough et al. 2016) and consumers find some forms of sustainable behaviour change (e.g., changing travel behaviours) to be particularly threatening to identity (Murtagh, Gatersleben and Uzzell 2012). In another line of research, perceived threats to a consumer's identity as a Republican (as opposed to a Democrat) led consumers to exhibit backfire effects in response to climate change communications, in which Republican support for climate change mitigation policies became more negative after hearing information about climate change as opposed to a control condition (Hart and Nisbet 2012). Thus, marketers wishing to encourage sustainable consumption should positively associate desired sustainable behaviours with the self-concept, and consider buffering the effects of actions that might be threatening to the self-concept. For example, **self-affirmation** tasks (i.e., endorsing important self-values), which have been shown to decrease self-defensive reactions to threat, can mitigate self-protective responses and make people more likely to endorse pro-environmental behaviours (Brough et al. 2016; Prooijen and Sparks 2014; Sparks et al. 2010).

Another interesting facet of the self-concept is that products can become linked to people's sense of self-identity (Belk 1988). One consequence of this is that people are often unwilling to give away products that are linked to the self. This occurs in part because people want to avoid a sense of identity loss that would be associated with giving away the product (Belk 1988; Winterich, Reczek and Irwin 2017). As a result, having people take a picture of a sentimental product before considering donating it can increase donations of possessions (Winterich et al. 2017). Finally, people are more likely to take care of items that are linked to the self, being more likely to recycle (rather than throw away) products that are associated with the self-concept in some way (Trudel, Argo and Meng 2016).

1 We further discuss the role of personal norms later when we discuss the emotion of guilt.

Self-consistency

In addition to wishing to view the self-concept positively, consumers also demonstrate the motivation to view the self as being consistent. Work in the **self-consistency** tradition demonstrates that getting consumers to reinforce an aspect of the self-concept (e.g., as being pro-environmental) can subsequently lead to congruent behaviours at a future point in time. Many foundational psychological theories make such self-consistency predictions (Bem 1972; Festinger 1957; Heider 2013). Consistency approaches have been proposed to be effective because being inconsistent creates a negative emotional state – **cognitive dissonance** – that the consumer is motivated to avoid (Cialdini, Trost and Newsom 1995; Festinger 1957). Moreover, another theory called **Self-perception theory** suggests that people often engage in consistent actions because they use a behaviour at one point in time to infer their true underlying attitude, and they are then motivated to follow through with future consistent behaviours (Bem 1972; see also der Werff, Ellen and Keizer 2014). For example, if you agreed to attend a fundraiser for a new social enterprise, you might infer that you have a very positive attitude towards the organisation from observing your own behaviour (you showed up, so you must like the organisation!) and thus be more likely to continue to support the cause in the future. Indeed, research shows that engaging in a sustainable consumer behaviour at one time can lead to other positive sustainable behaviours (Thøgersen and Crompton 2009), and that interventions aimed at encouraging consumers to be consistent in their sustainable behaviours can be the most effective factor in terms of predicting future positive behaviours in similar domains (Whitmarsh and O'Neill 2010). For example, reminding consumers of past behaviours (such as completing a questionnaire when they engaged in water conservation) can increase future consistent behaviours (actually engaging in more water conservation at a later point in time, for instance; Aitken et al. 1994).

Consumers demonstrate the motivation to view the self as being consistent.

Moreover, making personal commitments to engage in a behaviour or event predicting one's future behaviours at one point in time can also increase sustainable behaviours in the future (Bodur, Duval and Grohmann 2015; Katzev and Johnson 1984). Private commitments have been shown to be more compelling predictors of behaviour when they are made in writing (Pardini and Katzev 1983). Interestingly, reminding consumers of a time when their behaviour was not consistent with their personally held beliefs can also make consumers more likely to subsequently engage in sustainable consumption behaviours such as water conservation (Dickerson et al. 1992) and choosing green products (Peloza et al. 2013). Also, tying a commitment to implementation intentions, whereby consumers are asked not only about their commitment to engage in the behaviour but also to report how they plan to do this, can be an effective means of encouraging sustainable consumption (Bamberg 2002). In another example of self-consistency effects, something called **"positive spillover"** is observed at times, wherein individuals who perform sustainability in one domain are more likely to perform positively in other sustainable domains as well (Juhl, Fenger and Thøgersen 2017; Lanzini and Thøgersen 2014; Lokhorst et al. 2013; Ölander and Thøgersen 2014; Thøgersen and Ölander 2006; Truelove et al. 2014).

Although there is a great deal of evidence for these types of self-consistency effects, researchers have sometimes documented clear inconsistency effects. That is, occasionally consumers who have engaged

in or even recalled engaging in a sustainable behaviour at one point in time will subsequently be less likely to engage in sustainable consumer behaviour when later given the opportunity to do so (Mazar and Zhong 2010). For example, Mazar and Zhong found that people who had engaged in a virtual shopping task that directed them to consider green products (v. those who had a conventional shopping experience) were more likely to engage in antisocial behaviours later. Researchers have called this a **licensing effect**, wherein engaging in a positive behaviour the first time essentially gives the consumer license (or an excuse) to behave less positively the second time (Bolton, Cohen and Bloom 2006; Sachdeva, Jordan and Mazar 2015; Tiefenbeck et al. 2013). Sometimes licensing patterns (or negative spillover effects) can be spurred by increased availability or improvements in sustainable options and technologies. For example, researchers found that people use

Making commitments improves engagement in sustainable behaviours.

increased amounts of paper when the option to recycle is made salient (Catlin and Wang 2013). In a similar vein, improving petrol consumption can have the unintended consequence of consumers subsequently driving more miles (Small and Dender 2007), and improving the efficiency of heating and air conditioning can lead consumers to increase their usage (Sorrell, Dimitropoulos and Sommerville 2009). Another recent study demonstrated that making a sustainable product choice (e.g., selecting LED light bulbs or biodegradable paper towels) undermines subsequent pro-environmental behaviours among individuals low in environmental consciousness, but enhances subsequent pro-environmental behaviour among individuals high in environmental consciousness (Garvey and Bolton 2017).

We did an informal analysis of articles looking at consistency and licensing effects in the domain of sustainable consumer behaviour (see Exhibit 18). Our review finds 16 articles that show consistency effects in sustainability and two more articles that show cleansing effects (Dickerson et al. 1992; Peloza et al. 2013), i.e. reminding people of times when they have behaved in a manner inconsistent with their sustainable values makes them more sustainable (more consistent with their values) in the future. Among the 16 articles that show consistency effects, 12 document positive spillover effects from one behaviour to another, i.e. behaving in a sustainable manner in a different domain. Of these, five studies document generalised spillovers to several other domains (Berger 1997; Bratt 1999; Lanzini and Thøgersen 2014; Thøgersen and Crompton 2009; Tobler, Visschers and Siegrist 2012), one shows spillovers to a wider range of products in the same category, such as organic purchases (Juhl et al. 2017) while the remaining test spillovers to specific domains (Harland et al. 1999; Thøgersen 1999; Thøgersen and Noblet 2012; Thøgersen and Ölander 2003; Willis and Schor 2012). Three studies show that this consistency behaviour depends on whether the initial act is seen as a part of an individual's environmental identity (Cornelissen et al. 2013; Van der Werff, Steg and Keizer 2013; Whitmarsh and O'Neill 2010). Other studies show that making commitments improves engagement in sustainable behaviours (Bamberg 2002; Bodur et al. 2015; Katzev and Johnson 1984; Pardini and Katzev 1983; Werner et al. 1995), including a meta-analysis of environmental studies (Lokhorst et al. 2013). This is in line with a recent review of moral licensing and consistency behaviours that indicates thinking of past moral behaviour as commitment (versus progress) towards a goal and linking the behaviour to our values and identity can lead to consistency behaviours (Mullen and

Monin 2016). For example, when the person views a first sustainable action as reinforcing their commitment to a goal they are more likely to behave consistently on a future sustainable behaviour (e.g., I want to be an eco-friendly person). However, if the person views the first sustainable behaviour as having fulfilled their desire to act sustainably (e.g., I have already resolved the goal to act in an eco-friendly manner), they may see that no further positive actions are required and be less likely to act sustainably when given the opportunity to do so.

On the other hand, we find 20 articles that document licensing effects. Of these, 12 can be categorised as negative spillover effects where initial sustainable behaviour led to non-environmentally friendly behaviour in a different domain. For instance, studies showed that those who practised sustainability at home were less likely to behave in an environmentally friendly manner on vacation (Barr et al. 2010; Miller et al. 2007). This was carried over to a wide range of other pro-environmental behaviours (Garvey and Bolton 2017; Klöckner 2013; Thøgersen 1999), including anti-pollution measures (Sachdeva et al. 2015) and recycling behaviours (Thøgersen and Ölander 2003). The eight remaining articles study the rebound effect (Berkhout, Muskens and Velthuijsen 2000); this is the result of improved efficiencies that sometimes result in increased usage and thus less sustainable behaviour, including greater use of recycled paper (Catlin and Wang 2013), driving more miles in fuel-efficient vehicles (Small and Dender 2007) and increased energy usage (Herring 2006; Hirst, White and Goeltz 1985; Jacobsen, Kotchen and Vandenbergh 2012; Sorrell et al. 2009). However, these studies show that although usage increases slightly after efficiency upgrades, this is usually only 10–30% more (Ehrhardt-Martinez, Donnelly and Laitner 2010) and the overall savings from technological improvements in efficiency are still large (Gillingham et al. 2013; Greening, Greene and Difiglio 2000).

One question, then, is how can the practitioner ensure that a commitment or behaviour made at one point in time subsequently leads to other congruent sustainable behaviours, rather than to a licensing pattern of effects? One important factor appears to be how costly the first behaviour is. If the initial behaviour is effortful (versus easy and costless), the tendency to license is mitigated (Gneezy 2017; Gneezy et al. 2012). Moreover, if the initial behaviour is costless and allows the individual to fulfill the goal of looking good to others, this might decrease the tendency to engage in meaningful behaviour change later. In one set of studies, the phenomenon of **slacktivism** was examined, wherein engaging in a token support behaviour (e.g., liking a Facebook page) at one point in time does not increase people's tendencies to engage in similar, positive behaviours in the future (Kristofferson, White and Peloza 2014). Participants who engaged in a public form of token support for a cause that publicly conveyed to others that they are "good people" (such as joining a "public" Facebook group or signing a public online petition) were less likely to engage in a private pro-social task later. Interestingly, those who privately engaged in the first behaviour showed a consistency effect and were more likely to engage in the second, more meaningful task (compared to people who did not engage in the initial token support). People who engaged in the initial costless behaviour in private were more likely to see the cause as something that reflects their true values (think back to self-perception theory), and they followed through with consistent behaviours. Thus, practitioners would do well to ensure that initial sustainable choices and actions are somewhat effortful, and that they are made in a way that allows the consumer to feel they reflect true underlying values (Evans et al. 2013; Kristofferson et al. 2014). Encouraging people to make a commitment that is more long-term or highlighting how the behaviour is linked to one's own identity and endurini

values can help encourage consistency as opposed to licensing effects (Kristofferson et al. 2014; Sachdeva et al. 2015).

Self-interest

An additional manner in which the individual self can be leveraged to encourage sustainable consumer behaviour change is appealing to **self-interest** in some way (Evans et al. 2013). Both economic (e.g., Paavola 2001; Turaga, Howarth and Borsuk 2010) and evolutionary theories (Griskevicius, Cantú and Vugt 2012) of consumer behaviour suggest that appealing to self-interest is a compelling means of encouraging sustainable consumer behaviours. Given that consumers must often make trade-offs in terms of self-interest when they engage in sustainable consumer behaviours (Luchs and Kumar 2017), it can be worthwhile to remind consumers of the self-benefits related to a given sustainable product, service or behaviour (e.g., Brunel and Nelson 2000; Green and Peloza 2014; Nolan et al. 2008; White and Peloza 2009). One way to think about appealing to self-interest is to highlight self-benefits that directly counteract the specific barriers that have been identified with regard to the sustainable product, service or behaviour. For example, one barrier to sustainable consumption is the fact that having sustainable attributes might diminish perceptions of other attributes that are important to the self, such as functionality (Lin and Chang 2012; Luchs et al. 2010; Newman et al. 2014), aesthetics (Luchs et al. 2012; Luchs and Kumar 2017), affordability (Gleim et al. 2013; Hughner et al. 2007) or accessibility (Gleim et al. 2013). Thus, appealing to self-interest in ways that address specific barriers to the self – such as price, performance risks, aesthetic limitations or greenness of the product – can be an effective behaviour-change strategy (Lanzini and Thøgersen 2014). Companies are recognising the benefits of appealing to self-interest by counteracting perceived barriers. In one example, Clorox's GreenWorks line of cleaners has historically been priced at a 20% premium compared to traditional competitors, but the company dropped this premium as part of a brand relaunch in 2013, to overcome the barrier of higher financial cost (Levere 2013). Tesla's model 3 raked in over $180 million in one day by offering an attractive and innovative design, a high-performing electric vehicle and an affordable price. In doing so, Tesla overcame many consumer barriers typically associated with electric cars (barriers linked to aesthetics, performance and price), while appealing to the desires of a segment of consumers who care about sustainability (Ledford 2017; Patrick 2016).

Appealing to self-benefits has been shown to work best under private conditions where the consumer is more likely to be reflecting on the individual self.

When does appealing to self-interest work best? Appealing to self-benefits has been shown to work best under private conditions where the consumer is more likely to be reflecting on the individual self (White and Peloza 2009) and when the individual self is activated in some way – for example, by using language that makes the individual self salient (e.g., "You as an individual can make a difference", White et al. 2014). Finally, some researchers have suggested that appealing to self-interest alone is often not enough to spur consumers to action (Carrico and Riemer 2011; Schultz et al. 2007). Thus, while appealing to self-interest may help to communicate ways to overcome barriers to sustainable action, this strategy may work best when it is used in combination with other tools.

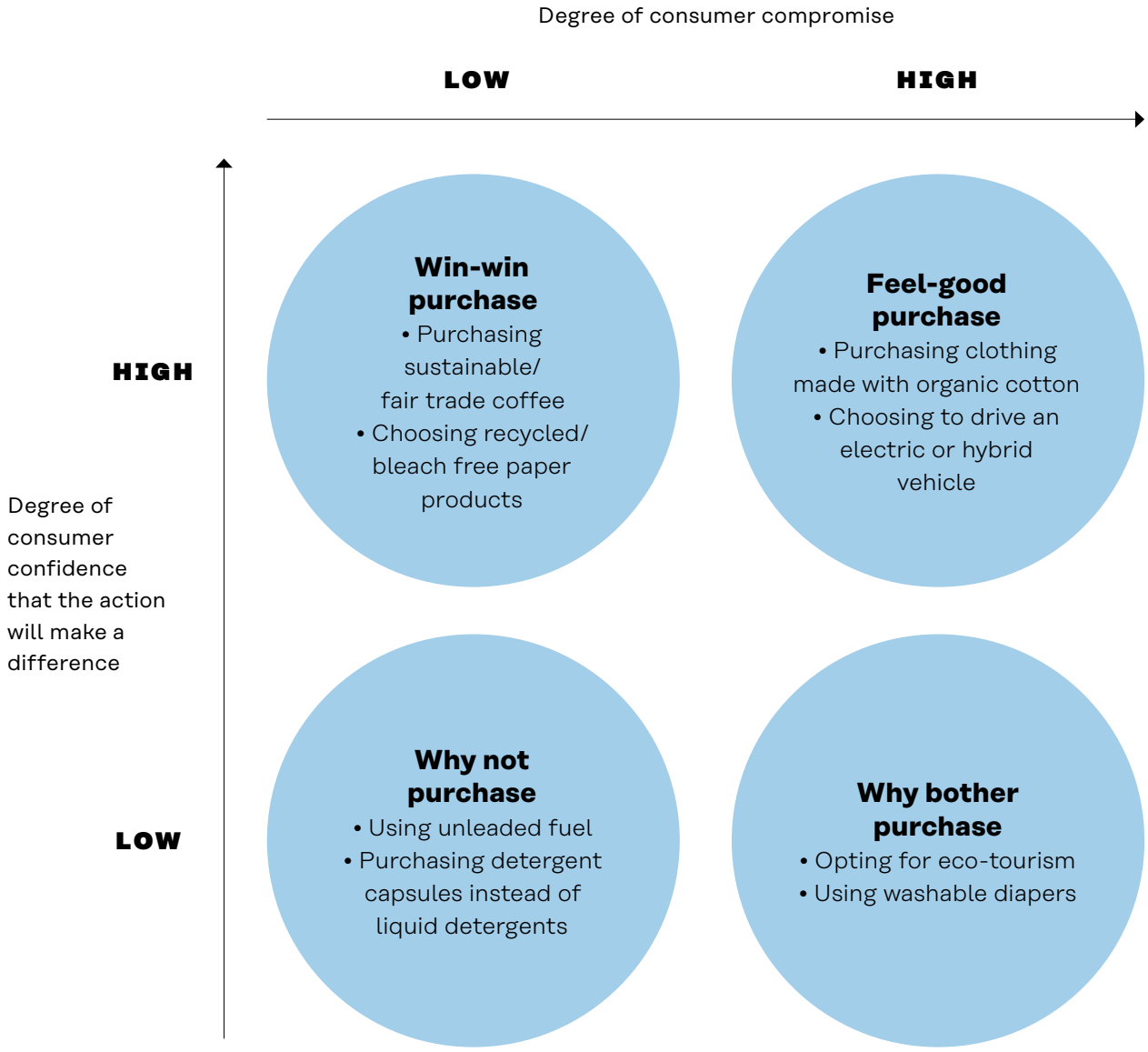
Self-efficacy

An additional means of leveraging the individual self to spur sustainable consumer behaviours is to encourage a sense of self-efficacy. **Self-efficacy** has two important facets. First, consumers must believe that they have the ability to engage in the desired behaviour (in a similar way to perceived behavioural control discussed earlier in relation to the theory of planned behaviour). Second, the consumer must think that the action can be effective in making a difference. Making consumers feel a sense of efficacy increases the likelihood of their engaging in sustainable behaviours and predicts continuing such behaviours over the long term (Armitage and Conner 2001; Cleveland, Kalamas and Laroche 2005; Ellen, Wiener and Cobb-Walgren 1991; Meinhold and Malkus 2005; White et al. 2011).

Combining aspects of self-interest in **degree of consumer compromise** and self-efficacy, Peattie (1999, 2001) introduced a tool called the Green Purchase Perception Matrix (see Exhibit 7) that helps determine the degree to which a consumer must compromise (which can include paying a higher price, giving up other desirable attributes, engaging in more effortful behaviours, etc.), and the degree to which the consumer is confident that the product can make a difference in addressing a genuine sustainability issue. It is worth thinking about where a given product or behaviour fits in the matrix and adapting the method of communicating to consumers or aspects of the product itself.

The first type of behaviour that Peattie identifies is the **win-win purchase**. These types of purchases represent high efficacy as well as low compromise. Such behaviours are easiest to encourage because the practitioner can communicate a self-benefit (decreased consumer compromise) and high efficacy (consumer confidence). Given that such behaviours are relatively easy to accomplish, tools related to encouraging positive consumer habits can be used here. The second category is referred to as a **feel-good purchase**. Feel-good purchases require a high degree of consumer compromise, while also conferring a high degree of confidence that they will truly address a sustainability concern. An example of this is deciding to purchase a hybrid or electric vehicle. This action is seen by consumers as making a clear sustainable difference, yet it also carries a high degree of compromise such as increased financial cost and effort. Such decisions are not made lightly and will not be based on habit. Rather, connecting such choices with enduring consumer motives, identities and values will be relevant in such cases. **Why bother purchases** are those that require a high degree of compromise and inspire low consumer confidence in their effectiveness. The last category is called **why not purchases**. These are purchases or behaviours that are relatively easy for consumers to engage in, but the consumer is not fully confident of their efficacy. The take-home message from this framework is to, whenever possible, decrease the degree of consumer compromise and increase confidence in making a sustainable difference. Notably, in order to increase consumer confidence, the consumer also needs to trust that the organisation and the product itself are actually environmentally friendly (Gleim et al. 2013).

EXHIBIT 7.
THE GREEN CONSUMER PERCEPTION MATRIX



Adapted from Peattie 1999, 2001

Individual differences

The final tool related to the individual self is to recognise that there are a number of individual differences in values, personality traits and demographics that can predict the propensity to engage in sustainable consumer behaviours. As we have seen, those who hold strong pro-environmental values and pro-social personality traits are more likely to engage in sustainable consumption (Corral-Verdugo et al. 2009; Nordlund and Garvill 2002, 2003; Schultz and Zelezny 1999; Stern et al. 1993; Whitmarsh and O'Neill 2010). This stream of work generally finds that the more strongly people endorse values beyond their own immediate self-interest – such as pro-environmental, **self-transcendent**, pro-social or **biospheric values** – the more likely they are to engage in sustainable consumer behaviours (Haws, Winterich and Naylor 2014; Sharma and Jha 2017). In addition, consumers who strong in the traits of altruism, conscientiousness and frugality are more likely to engage in sustainable consumer behaviours (Granzin and Olsen 1991; Iwata 2001; Ribeiro, Veiga and Higuchi 2016). On the other hand, holding materialistic values and feeling a lack of time lead consumers to be less likely to engage in ecologically sustainable behaviours (Pepper, Jackson and Uzzell 2009; Tanner and Kast 2003).

Other work has focused on identifying the "green" consumer segment. One segmentation scheme identifies those labelled as "LOHAS", which stands for "lifestyles of health and sustainability" (Natural Marketing Institute 2017). The market for LOHAS products is growing and encompasses organic foods, energy-efficient appliances, alternative medicine and ecotourism. Individual differences in mindfulness and self-awareness have also been shown to predict sustainable consumer behaviours (Bahl et al. 2016; Barber and Deale 2014; Sheth, Sethia and Srinivas 2011).

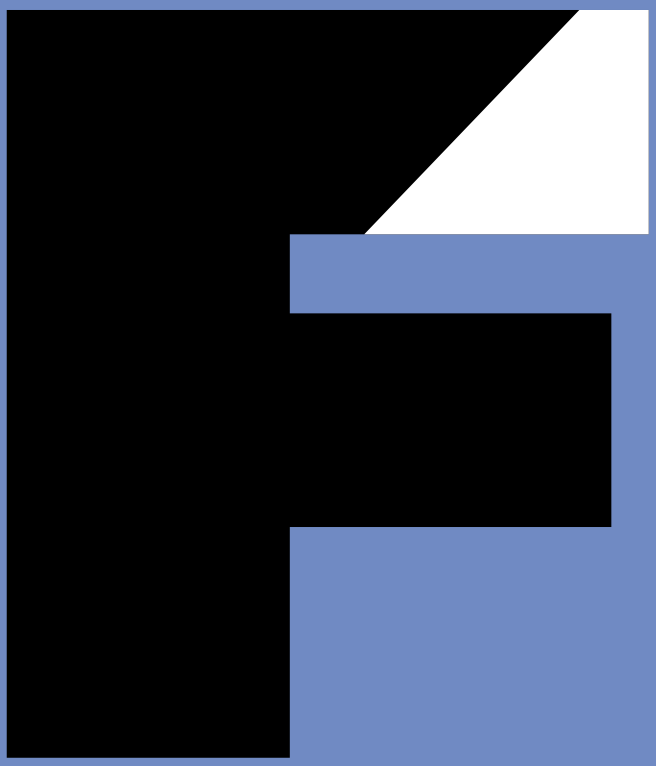
Another relevant individual difference factor is the consumer's stage in the decision-making process. For example, the consumer might be unaware that a problem exists, might be aware that the problem exists but has not yet acted or might have already taken steps towards sustainable consumer behaviour change (Pelletier and Sharp 2008). One prominent theory often used in the domain of health behaviour change literature is called the **Transtheoretical model**. The framework suggests that there are five stages of change that people move through, and that it makes sense to appeal to individuals in a manner that reflects their readiness to change their behaviours (DiClemente and Prochaska 1983; Prochaska and Velicer 1997). These five stages have been labelled pre-contemplation, contemplation, preparation, action and maintenance. Research shows that these stages are relevant in predicting sustainable consumption behaviours (Semenza et al. 2008). The idea here is that it does not make sense to communicate information that does not match with the stage that the consumer is at relative to the decision-making context. If the consumer has not made the decision to act sustainably or does not know that there is a problem that needs to be addressed (the pre-contemplation stage), providing detailed information on how to engage in a behaviour will not be very effective. The aim should be to match the marketing message to the stage of consumer readiness to engage in ecologically sustainable behaviours (Schwinghammer 2013; Semenza et al. 2008).

Finally, demographic variables have been shown to predict sustainable consumption behaviours. Gender differences have sometimes been observed with regard to sustainable consumer behaviours, with most of this research showing that females are more concerned about sustainability issues and are more likely to engage in pro-environmental behaviours (e.g., Dietz, Kalof and Stern 2002; Dupont 2004; Eagly 2009; Koos 2011; Luchs and Mooradian 2012). In one review (Diamantopoulos et al. 2003), males were found to be more knowledgeable

that females about sustainability issues (7/8 studies), but females were more likely than males to report positive pro-environmental attitudes (14/21 studies) and behaviours (11/23 studies). Gender differences in values, attitudes and behaviours may be due in part to differences in traits such as interdependence (being communal and interconnected with others), agreeableness (being pleasant and accommodating in social situations) and openness to experience between males and females, with females being stronger on these traits (Eagly 2009; Luchs and Mooradian 2012). Other work has linked demographic variables such as age, education and political affiliation to sustainable consumer behaviours, such that those who are younger, better educated and more liberal in their political orientation are more inclined to engage in sustainable consumer behaviours (Diamond and Loewy 1991; Gilg, Barr and Ford 2005; Olli, Grendstad and Wollebaek 2001; Semenza et al. 2008). Notably, however, differing results have been found across studies for age (Diamantopoulos et al. 2003). While studies find a trend where younger people are more likely to endorse sustainable attitudes and values, some studies do find that older consumers may be more willing to actually engage in sustainable intentions and behaviours. One suggestion is that although younger consumers have strong pro-environmental values, they may not have the resources to make sustainable purchases and engage in other sustainable behaviours (Diamantopoulos et al. 2003). One implication of individual differences is that it makes sense to appeal to those who are more likely to respond positively to sustainable products, services and behaviours. Is the consumer dispositionally inclined to adopt the desired behaviour? Is the consumer in the right frame of mind and stage of the process in terms of the decision-making to engage in the desired action? Information and the use of other tools should be tailored to reflect the specific needs, desired benefits and perceived barriers within different segments of consumers (e.g., Abrahamse et al. 2007; Daamen et al. 2001). Please refer to Exhibit 8 for a summary of tools related to the individual self.

EXHIBIT 8.
TOOLS: INDIVIDUAL SELF

TOOL 1	**Personal norms**	• Appeal to those with strong personal norms related to sustainability. • Activate relevant personal norms by reminding consumers of moral or pro-social obligations to act in a sustainable manner.
TOOL 2	**Positivity of the self-concept**	• Allow the behaviour or product to have positive associations for the self. • Connect the self-concept to the product, service or behaviour.
TOOL 3	**Make it easy**	• Encourage consumers to engage in sustainable consumer behaviours that are consistent with their own beliefs, values and previous actions. • Encourage commitments to engage in sustainable behaviours. • Avoid licensing effects by asking for meaningful commitments and linking behaviours to deeply held values.
TOOL 4	**Incentives**	• Appeal to self-interest, especially in ways that overcome barriers related to the sustainable product, service or behaviour. • Combine appeals to self-interest with other tools.
TOOL 5	**Self-efficacy**	• Make consumers feel that they can engage in the desired sustainable consumer behaviour. • Highlight how the desired behaviour can make a meaningful impact. • Consider the interplay between self-interest (degree of consumer compromise) and efficacy (confidence in product being able to make a difference).
TOOL 6	**Individual differences**	• Take into account individual differences in terms of personality, values and demographics. • Appeal to consumers who are oriented towards sustainability, but also to those for whom the product, service or behaviour will resonate.



Feelings and cognition

Feelings and cognition

In this section, the importance of communicating in terms of both feelings and cognition will be reviewed. We will discuss negative and positive emotional influences on sustainable consumer behaviours. Then, we will turn to a discussion of how more controlled and more automatic thought processes can influence sustainable consumer behaviours.

Guilt and pride

Two specific emotions that have been studied extensively in relationship to pro-environmental behaviours are pride and guilt. Guilt and pride differ in several ways but both are **self-conscious emotions**. While guilt is perceived as negative and pride as positive, both share a common appraisal of seeing the self as being responsible for outcomes (Lerner and Keltner 2000) and both are classified as moral emotions (Haidt 2003). A meta-analysis of determinants of pro-environmental behaviour finds that guilt is an important predictor of moral norms, attitudes and perceived behavioural control (PBC) which then influence environmentally friendly attitudes and behaviours (Bamberg and Möser 2007). The authors explain the association of guilt with attitudes and PBC by the fact that those who anticipate more guilt when acting in a non-environmentally friendly manner also feel that sustainable behaviour has more positive outcomes and is easier to perform. Studies also looked at the association between problem awareness and guilt and found a large effect size of 0.63. When people feel guilty for their actions they feel more morally responsible for the environment and are subsequently more likely to behave in an environmentally friendly manner (Kaiser and Shimoda 1999). The relationship between guilt and personal norms is bi-directional, as having people consider their own personal norms has also been shown to increase feelings of guilt (Peloza et al. 2013). In one line of research, travel mode choices were predicted by individuals' personal norms, which were driven by both feelings of guilt and perceived social norms (Bamberg, Hunecke and Blöbaum 2007).

Research has also looked into how anticipated guilt can affect people's environmental decisions (Carrus, Passafaro and Bonnes 2008; Grob 1995; Kaiser 2006; Peloza et al. 2013). Anticipated guilt can influence people to act in a pro-environmental manner or purchase ethical products to avoid feeling guilty in the future (Peloza et al. 2013; Steenhaut and Kenhove 2006). This guilt arises when people hold being environmentally friendly as an important self standard and increases when people feel that they have not met their own standards, when they feel greater self-accountability and when they are in public situations (Peloza et al. 2013). These researchers found that promoting products through ethical attributes is more effective than clear guilt appeals, which can sometimes backfire if they are too explicit. This led to decreased intentions to engage in sustainable behaviours compared to a control group.

Pride, as mentioned before, is a positive emotion that causes people to feel that they are responsible for positive outcomes. In its most positive form it is referred to as **authentic pride**, and is associated with a sense of purpose and the attainment of goals (Antonetti and Maklan 2014). Pride can have strong effects on not only initiating but also continuing pro-environmental behaviour (Bissing-Olson, Fielding and Iyer 2016). One study found that the effect of pride on continued pro-environmental behaviour increases when people feel that those who are important to them perceive eco-friendly friendly behaviour as a norm (Bissing-Olson et al. 2016). It is thus important to form **group norms** that encourage environmental behaviour in order for people to feel proud and continue engaging in that behaviour. Although feelings of pride

and guilt have been shown to influence pro-environmental behaviours it is important to keep in mind cultural differences in the functions of these emotions (Onwezen, Bartels and Antonides 2014). In **individualistic countries**, anticipated pride and guilt are affected by personal attitudes rather than social norms, while for **collectivistic countries** social norms have a larger effect on anticipated emotions. Thus, it is worthwhile considering cultural context when communicating about sustainable behaviour change in the context of self-conscious emotions.

Collective guilt

Collective guilt, or guilt experienced because of the actions of one's own in-group, can also be a compelling motivator of sustainable intentions and behaviours (Ferguson, Branscombe and Reynolds 2011). Learning that one's country has a large carbon footprint can lead to collective guilt, which can subsequently predict support for a pro-environmental group (Mallett, Melchiori and Strickroth 2013). Similarly, reading about one's country's responsibility for environmental damage or human impact on climate change can induce feelings of collective guilt and also pro-environmental intentions (Harth, Leach and Kesle 2013; Rees, Klug and Bamberg 2015).

Collective guilt has also been shown to lead to a greater likelihood of carrying out pro-environmental behaviours such as conserving energy by using energy-efficient light bulbs and paying green taxes on fuel, electricity and income to reduce emissions (Ferguson et al. 2011).

On the other hand, when our in-group is responsible for environmental protection, people feel a form of group-based pride which activates in-group favouritism (Harth et al. 2013). In the case of environmental protection, people feel pride for their in-group (their own country) and are more willing to donate to environmental organisations that focus on environmental protection within their country and are less willing to help other countries out.

Fear and other negative emotions

Highly arousing negative emotions such as fear also play a large role in shaping behaviour, as they tend to lead to avoidance of negative consequences like punishment and disapproval. Advertisements for green products and companies frequently use fear appeals (Banerjee, Gulas and Iyer 1995). Fear appeals include using words like "dangerous", "chaos" and "fear" in advertisements related to climate change, as well as dramatic imagery that visualises the consequences of climate change, such as famine or polar bears on ice floats (O'Neill and Nicholson-Cole 2009).

One issue with communicating fear appeals in the domain of sustainable consumer behaviours is that environmental threats often involve uncertain consequences that feel relatively far in the future and may feel less dangerous to the self (Hathaway 2017; Lowe et al. 2006). It is also important to note that although low self-efficacy of solving the problem can lead to greater fear, increasing the experience of fear too much might undermine feelings of self-efficacy and decrease pro-environmental behaviours. When individuals feel unable to control the threat they may instead attempt to control the feeling of fear by emotion-focused coping through denial or scepticism, as well as externalising responsibility and giving other issues greater importance (O'Neill and Nicholson-Cole 2009). These methods disconnect individuals from the issue, thereby reducing their fear, but do not reduce the risk of being affected by climate change. Some studies have shown an interaction between emotion and political orientation. One Canadian study found that fear appeals in anti-pollution advertisements can lead to greater commitment to pro-environmental behaviours, but only from those with liberal political beliefs (Hine and Gifford 1991).

In addition to the negative emotion of fear, some research has examined the effect of sadness on sustainable intentions (Schwartz and Loewenstein 2017; Sevillano, Aragonés and Schultz 2007). In one study, sadness-

inducing videos led respondents to be more likely to act sustainably (e.g., they spent more time devoted to an energy-footprint calculator and were more inclined to give donations to an environmental organisation; Schwartz and Loewenstein 2017). However, once emotions have cooled off after a delay, there are no differences in induced behaviour between affective and non-affective messages. Thus, emotions might be more persuasive in the moment and it might be worthwhile getting people to commit to pro-environmental behaviours when they are experiencing the relevant affective state.

Sustainable actions can lead to positive, "warm glow" emotions which can spill over, leading to positive evaluations of an overall service experience.

Hope and other positive emotions

One emotion that is critically related to environmental actions but has received less attention is that of hope. Hope is a positive emotion that is a vital coping resource in difficult times, particularly in times of despair. It is associated with "fearing the worst but yearning for better and believing the wished-for improvement is possible" (Lazarus 1999, 2006). Hope is evoked by appraisals of a future outcome that is in line with one's goal, that is important and possible but not certain, and that leads to a better future (Chadwick 2015). Positive environmental actions can lead to greater feelings of hope (and lower feelings of fear and anger) than simply discussing the negative consequences of not engaging in positive actions. This, in turn, increases climate activism and participation in climate-related campaigns (Feldman and Hart 2016). One study showed that appraisals of future expectations of the effect of individual action on climate change increased hope (Chadwick 2015). Presenting climate change as a health issue rather than an environmental or national security issue has been shown to result in greater levels of hope (Myers et al. 2012). It has also been shown that hope results in greater support for policy that mitigates climate change (Feldman and Hart 2017; Smith and Leiserowitz 2014). A recent study of over 1,500 US adults found that feeling hope results in stronger support for climate actions and policies to reduce climate change among people from different parts of the political spectrum. Anger on the other hand, resulted in polarisation between liberals and conservatives in terms of policy actions (Feldman and Hart 2017). Please see Exhibit 10 for a list of some key emotions and their appraisal properties.

Other research has focused on positive emotions more generally and has shown that people are more likely to engage in sustainable consumer behaviours when they derive some degree of positive affect or satisfaction from the act (Onwezen, Antonides and Bartels 2013; Pelletier and Sharp 2008; Rezvani, Jansson and Bengtsson 2017; Sun and Trudel 2017; Verdugo 2012). In one example from Volkswagen's "Fun Theory" campaign, making recycling fun to do made people more likely to engage in the behaviour (refer to Exhibit 9). Engaging in sustainable actions has been shown to lead to positive, "warm glow" emotions and such emotions can spill over, leading to positive evaluations of an overall service experience (Giebelhausen et al. 2016). Also, positive feelings of affinity towards nature also predict pro-environmental attitudes and intentions (Kals, Schumacher and Montada 1999). Finally, some research also suggests that positive emotions and affect can work in a negative way, leading to decreased positive environmental actions, because some unsustainable behaviours such as car use can be linked to positive affective and symbolic benefits (Steg 2005).

EXHIBIT 9.
IN ONE EXAMPLE OF ASSOCIATING POSITIVE EMOTIONS WITH A SUSTAINABLE BEHAVIOUR, VW INTRODUCES A RECYCLING SYSTEM THAT GIVES PLAYERS POINTS LIKE AN ARCADE GAME

www.funtheory.com

EXHIBIT 10.
EMOTIONS AND THEIR APPRAISAL TENDENCIES

Emotion	Appraisal tendency	Actions
Fear	Perceive negative events as unpredictable and under situational control • low certainty • low control • high anticipated effort	Combine fear appeals with efficacy by sharing the steps people should take
Guilt	Perceive negative events as brought about by self • individual responsibility	Use subtle cues to appeal to people's self-standards and increase self-accountability Be aware that explicit guilt appeals can backfire Use anticipated and collective guilt to motivate actions
Pride	Perceive positive events as brought about by self • individual responsibility	Form group norms that encourage continuing environmental behaviour
Hope	Perceive positive future events that lead to a better future as possible but not certain • low certainty	Focus on actions that reduce the danger to activate hope and minimise fear and anger

The power of several emotionts can be harnessed to bring about more sustainable behaviours. However, it is important to keep in mind the range of appraisals associated with each emotion in order to maximise positive behaviour and minimise negative behaviour. The above table summarises four key emotions (two positive and two negative) and their appraisals, along with the actions that work best when using each emotion in communication. For instance, fear is associated with low certainty or unpredictability, and also low levels of individual control. Thus, using fear appeals in communication can feel overwhelming if people do not have information on how to counter negative events. Providing people with steps they should undertake can increase their efficacy and make fear more effective at transforming behaviour. Similarly, guilt should also be evoked subtly so that the individual responsibility associated with anticipated and collective guilt can work without explicit guilt and blame appeals backfiring. Pride can be especially helpful in motivating continuing sustainable behaviour when group norms are such that people feel proud of their environmental actions. Lastly, the low certainty of some appeals can lead to the elicitation of negative emotions like fear and thus care must be taken to ensure that the focus is on positive actions (and highlight the effectiveness of these actions) to activate hope.

Care must be taken to ensure that the focus is on positive actions to activate hope.

Cognition

One means of using cognition to persuade consumers to engage in sustainable actions is by conveying detailed information about desired (and undesired) sustainable behaviours and the consequences of such behaviours (McKenzie-Mohr 2000). Indeed, people's lack of knowledge has been used to explain the lack of uptake of sustainable products and behaviours, as a result of factors such as a 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). Appeals that give information on why the desired behaviour is helpful, as well as the sustainable properties of the product, can be effective in giving consumers the initial information they need on what sustainable consumption behaviours are possible and what their consequences are (Peattie and Peattie 2009). One meta-analysis involving 87 articles with 253 experimental treatments concluded that providing information has a significant yet moderate effect on encouraging sustainable consumer behaviours (Osbaldiston and Schott 2012). The size of the effect of various factors on sustainable behaviour were measured using the weighted mean of Hedge's *g*. This can be interpreted as the number of standard deviations by which the treatment group differed from the control group. For example, an effect size of 0.5 indicates that the treatment group was 0.5 standard deviations above the control group. An effect size of 0.2 is generally seen as small, 0.5 as medium and 0.8 and higher as large. Another way to interpret effect sizes is by considering the percentage of people who performed more of the desired behaviour in the treatment group compared to the control group. For instance, an effect size of 0.5 indicates that 69% of the people in the treatment group performed more of the desired behaviour than the average person in the control group. For an effect size of 0.2 and 0.8, the percentage of people in the treatment group that performed more sustainable behaviour than the average person in the control group is 58% and 79% respectively. In this meta-analysis the largest effect sizes came from treatments that involved cognitive dissonance (effect size, g = 0.93), goal setting (g = 0.69), social modelling (g = 0.63) and

prompts (g = 0.62). Medium effects included making the sustainable behaviour easy (g = 0.49), providing rewards (g = 0.46), providing justifications (g = 0.43) and increasing commitment (g = 0.40). Another meta-analysis involving various information strategies found that providing information in the form of **individualised audits**, consulting, tips and feedback reduced energy use by an average of 7.4%. Individualised audits and consulting were studied in only 8.3% of the 156 field experiments included in the meta-analysis but resulted in the greatest energy savings with a large and significant effect size (Delmas et al. 2013).

One example of providing information is using eco-labelling to highlight the sustainable attributes of products and services (Parguel, Benoît-Moreau and Larceneux 2011). Some authors have suggested that positive environmental labelling would be more effective if this were contrasted against negative labelling for environmentally harmful products (Borin, Cerf and Krishnan 2011). Informational labels that grab attention are easy to understand, are consistent across categories and most importantly display important information to make it easier for consumers to make decisions that lower environmental impact (Borin et al. 2011; Taufique, Vocino and Polonsky 2017; Thøgersen 2000). Information is also more effective if an external entity such as a monitoring organisation validates the claim so that it seems unbiased (Manget, Roche and Münnich 2009a). Providing people with information related to cost savings has been shown to lead to more energy-efficient decisions (Bull 2012; Min et al. 2014).

Framing refers to presenting information that is objectively the same, but presenting it in qualitatively different ways.

However, this is not always the case; one review of 38 studies finds that providing information leads to greater knowledge but not necessarily energy-saving behavioural changes (Abrahamse et al. 2005; Geller 1981). It is worth keeping in mind that eco-labelling has been shown to be more effective for consumers who already have positive attitudes towards sustainability or who are strong on involvement (Thøgersen 2000). In one study, those consumers who already had positive attitudes towards sustainability were willing to pay more for and actually preferred the taste of a coffee that was eco-labelled (Sörqvist et al. 2013). In addition, some research suggests that females who are higher educated and who have children might be more responsive to eco-labels (Loureiro, Mccluskey and Mittelhammer 2002).

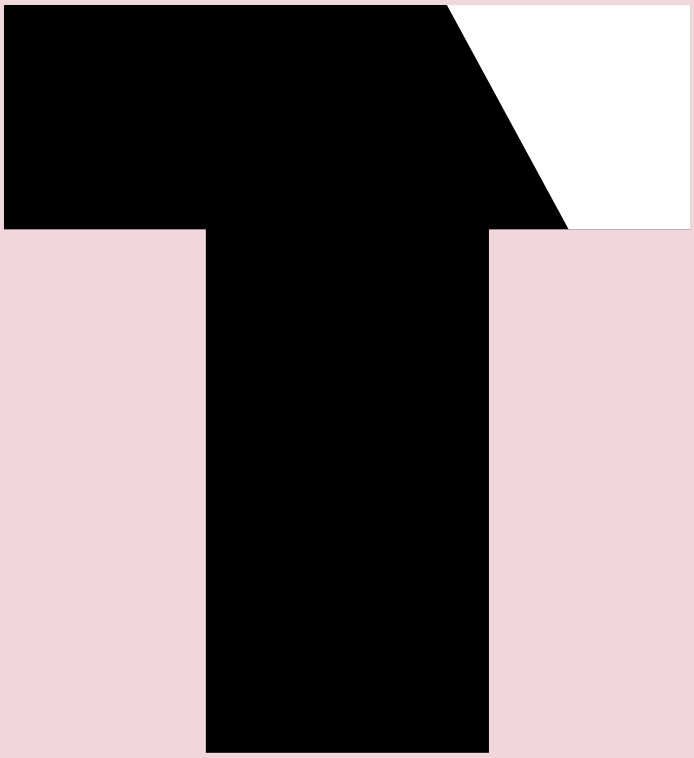
However, research also shows that information alone is sometimes not enough to lead to meaningful, long-lasting sustainable consumer behaviour change. Providing information is most effective when combined with more intuitive information such as affective appeals and symbolic information (Peattie and Peattie 2009). Moreover, giving consumers this information is not always the best solution, as more information can actually lead to greater confusion and difficulty in making decisions (Carrigan and Attalla 2001; Chen and Chang 2013). People also often find it difficult to judge the credibility of information that they are presented with and display a degree of cynicism, particularly when it comes from the company that is attempting to sell the product (Carrigan and Attalla 2001; Manget, Roche and Münnich 2009b). Thus, information should be offered thoughtfully, in a credible fashion and combined with other tools to influence sustainable behaviour change.

One way to think about presenting information appropriately to consumers is to consider the role of framing. Framing refers to presenting information that is objectively the same, but presenting it in qualitatively different ways. For example, people respond

more strongly to energy conservation messages when information is presented in terms of energy costs as opposed to energy savings (Bull 2012). Overall, people are more receptive to attribute frames that present information in ways that align with their goals (Ungemach et al. 2017). Highlighting lifetime energy costs has been found to shift consumers towards more sustainable behaviour (Kallbekken, Sælen and Hermansen 2013). Other studies have found that 10-year energy cost labels are effective in changing actual behaviour (Hardisty et al. 2018), as is annual cost (Min et al. 2014) and monthly cost of ownership information (Dumortier et al. 2015). In other research, communicating losses along with concrete information on how to engage in the behaviour or communicating gains along with abstract information on why the behaviour is important led to increases in quantity and accuracy of residential recycling (White et al. 2011). Please refer to Exhibit 11 for a list of tools related to feelings and cognition.

EXHIBIT 11.
TOOLS: FEELINGS AND COGNITION

TOOL 1 — **Feelings**	• Activate individual feelings of guilt, but do so in subtle ways to avoid reactance effects. • Be aware that explicit guilt appeals can backfire. • Activate feelings of fear and negative affect, but also highlight a sense of self-efficacy. • Encourage consumers to feel a sense of pride in their positive past behaviours. • Encourage hope linked to behavioural outcomes. • Focus on actions that reduce the danger to activate hope and minimise fear and anger.
TOOL 2 — **Cognition**	• Provide information to consumers, in concert with using other behaviour change tactics. • Use eco-labelling, especially information that is third-party certified. • Employ loss framing, especially linked with concrete information.



Tangibility

Tangibility

By their very nature, ecological consumer behaviours involve putting aside more **proximal**, immediate and individual interests in lieu of actions that confer benefits that are more **distal**, future-focused and other-oriented (White et al. 2011). Indeed, environmental appeals often ask people to engage in behaviours that are very tangible and costly in the present, but their long-term consequences are far off in the future, psychologically distant from the self and ill-defined (Amel et al. 2017; Spence, Poortinga and Pidgeon 2012). Moreover, the consequences of sustainable action and inaction are difficult to measure and track, both because changes occur very slowly over time and because of uncertainty surrounding the problems and their solutions (Weber 2010). For these reasons, sustainability is a concept that can seem psychologically distant, abstract and difficult for consumers to grasp (Reczek et al. 2018; Weber 2010). Thus, making ecological problems and solutions very clear and tangible is important for those wishing to encourage sustainable consumption. We outline some solutions below – matching temporal focus, communicating local impacts, employing concrete communications and encouraging the desire for intangibility.

Environmental appeals often ask people to engage in behaviours that are costly in the present, but their long-term consequences are far off in the future.

Matching temporal focus

Marketers wishing to motivate consumers to behave sustainably should do what they can to connect the current consumer mindset with outcomes that are construed as being abstract and distal from the self. One means of doing this is to create a match between the future focus of sustainability and the present focus of the consumer. For example, the individual consumer could be encouraged to think in a more abstract manner and/or focus on **future benefits** to engaging in sustainable consumer behaviours (Reczek et al. 2018; Zaval, Markowitz and Weber 2015). For example, asking individuals to think more broadly about the reasons why they should care about sustainability, along with the future benefits of acting sustainably (White et al. 2011) can increase sustainable actions. Indeed, research shows that consumers who are more future-focused are more inclined to act sustainably (Arnocky, Milfont and Nicol 2014; Joireman, Van Lange and Van Vugt 2004; Milfont and Gouveia 2006; Reczek et al. 2018). Work on temporal discounting also supports this notion. **Temporal discounting** refers to the tendency for individuals to value current payoffs more than future payoffs. Temporal discounting poses a problem for communicating the future benefits linked to engaging sustainably in the present because the further away the future payoff is perceived to be, the less desirable the consumer sees it to be in the present (Berman et al. 2016; Hardisty and Weber 2009; Vugt et al. 2014). Encouraging consumers to focus on the future and future generations is one way to mitigate this bias (Reczek et al. 2018; Wade-Benzoni, Tenbrunsel and Bazerman 1997).

Communicating local impacts

Another means of enhancing the perceived tangibility of sustainability issues is to communicate about sustainable actions and outcomes in a way that highlights local and immediate (as opposed to global and distal) impacts. For example, marketers can communicate the consequences of sustainable actions for a focal city or neighbourhood, rather than making references that seem more distant such as the world or a given country (Leiserowitz 2006; Scannell and Gifford 2013). Another strategy is to draw on immediate and "top-of-mind" examples such as extreme weather events. Consumers are more likely to report that they believe in human-induced climate change when the weather is hot or extreme (Li, Johnson and Zaval 2011; Westerling and Bryant 2008). In one recent survey, taken shortly after a season of extreme hurricanes (Hurricane Harvey and Hurricane Irma in 2017), an increased number of Americans acknowledged that climate change can have negative impacts such as increasing the severity of extreme weather events (Guskin and Dennis 2017).

If consumers can be encouraged to decrease the emphasis on the ownership of goods, this can have compelling consequences for sustainable outcomes.

Employing concrete communications

Another way to deal with the issue of intangibility of sustainable solutions and outcomes is to make environmental problems and solutions seem more concrete, relevant and tangible to the present self (Akerlof et al. 2013; Arnocky et al. 2014; Li et al. 2011; Reczek et al. 2018; Spence et al. 2012; Whitmarsh 2008; Yates and Aronson 1983). This can be done by making the consequences of climate change seem more relevant to the present (Paswan, Guzmán and Lewin 2017; Reczek et al. 2018, 2018), by communicating clearly about environmental impacts, or conveying steps to making a difference (White et al. 2011). For example, in the context of residential recycling, White et al. (2011) found that communicating losses (versus gains) associated with not engaging in pro-environmental behaviours, along with specific ways (specific details about what can be recycled, when to put the recycling cart out, etc.) to make a difference creates a "match" in terms of a concrete mindset, which can lead to positive sustainable behaviour change over time. In addition, communicating face to face and using vivid examples can increase the perceived personal relevance of communications (Yates and Aronson 1983). Strategies that make the impacts of sustainable inaction (or action) more clear, such as using vivid imagery and scenarios, narratives, analogies (Marx et al. 2007) or graphs to display concepts and likelihoods (Weber 2010). Climate change is often seen as a distant event but communications that make it seem relevant to the local community and social groups can help promote action (Spence et al. 2012). The example above of tying in currently experienced extreme weather events can also convey a tangible example of climate change (Li et al. 2011; Westerling and Bryant 2008). However, one review cautions against using communication that is too concrete, as reducing psychological distance can also activate negative emotions like fear and avoidance (McDonald, Chai and Newell 2015).

Encouraging the desire for intangibility

One additional challenge for encouraging sustainable consumer behaviours is that consumers have a desire for ownership of tangible goods over goods or experiences that are less tangible. One potential way of encouraging sustainable consumption is to

encourage **dematerialisation**, wherein rather than the consumption of tangible goods, the consumption of the immaterial is encouraged. This could include the consumption of digital goods (Atasoy and Morewedge 2018; Belk 2013), experiences (Van Boven 2005) and services (Lovelock 1983; Shostack 1977). Also, the notion of **voluntary simplicity** encourages a movement away from the ownership of material goods to simplifying one's consumption and lifestyles (Cherrier 2009). Moreover, the emerging "**sharing economy**" where products and services are shared or rented rather than owned (Zervas, Proserpio and Byers 2017) and the evolution of marketing to be more focused on the provision of services, intangible resources and the co-creation of value (Vargo and Lusch 2004) point to the notion that consumer needs can be dematerialised and fulfilled without the ownership of tangible goods. Finally, recently, the notion of **"liquid" consumption** has been introduced, which refers to consumption that is characterised as being more ephemeral, access-based and dematerialised. If consumers can be encouraged to decrease the emphasis on the possession and ownership of tangible goods and to move towards more dematerialised consumption, this can have compelling consequences for sustainable outcomes. Please see Exhibit 12 for a list of behaviour change tools linked to tangibility.

EXHIBIT 12.
TOOLS: TANGIBILITY

TOOL 1 — **Future benefits**	• Remind consumers to focus on the future, to match the future focus to sustainable actions.
TOOL 2 — **Local impacts**	• Make sustainable actions and impacts seem local and proximal, as opposed to global.
TOOL 3 — **Concrete communications**	• Highlight the specific outcomes and steps consumers can take. • Highlight the impacts of acting and not acting in ways that are self-relevant to the consumer. • Use vivid imagery. • Use analogies to communicate impacts and outcomes. • Use clear graphs to display issues and outcomes.
TOOL 4 — **Desire for intangibles**	• Encourage the desire for intangibles such as experiences, services and digital goods over the ownership of material goods.

How to use the SHIFT framework in practice

It is important to remember that no single consumer behaviour change tool works “best.” Rather, the most effective strategy is to consider the specific consumer behaviour you wish to change, the barriers (and benefits) associated with the behaviour and the intended target of any behaviour change strategy (McKenzie-Mohr 2000; Schultz 2014). Please refer to the steps in Exhibit 13 for an overview of how to use the tools in practice.

EXHIBIT 13.
STEPS TO USING THE SHIFT FRAMEWORK

STEP 1 — **Clarify the context**	Identify the specific behaviour you wish to influence. Be specific about what sustainable consumer behaviour you wish to influence. Rather than saying "I want my customers to be sustainable", you might say "I want my customers to purchase our new technology", "I want my customers to use this product more effectively" or "I want my customers to bring back the packaging, so it can be repurposed". Be clear about what your objectives are. In addition, consider the context in which the behaviour will take place. Is it public or private? Do you want to encourage short-term changes or long-term changes?
STEP 2 — **Identify the target segment**	Identify the specific group of consumers you wish to influence. It is worth considering the characteristics of your selected consumer segment. What are they particularly motivated by? What specific needs and wants do they have? Are there specific types of messages that would best resonate with them? Specific research might be done to better understand your target segment and their needs, as well as what they see as key barriers and benefits (see Step 3).
STEP 3 — **Determine the details**	Given what has been uncovered in steps 1 and 2, the practitioner should consider the specific barriers to behaviour change (as well as potential benefits of behaviour change). Why wouldn't consumers want to engage in the identified sustainable behaviour? What are the possible barriers to adoption of the product, service or behaviour? The best way to answer this question is to first look at existing research – does it have anything to say about barriers in your specific domain? The second step is to ask your current or desired customers. Different techniques such as observation, surveys, interviews, focus groups, etc. could be used for this purpose.
STEP 4 — **Select and apply the tools**	Select tools that make sense given the behaviour and the context, the target and the specific barriers and benefits associated with behaviour change. One way to do so considers the primary and secondary barriers that have been identified with regards to the target consumer segment engaging in the desired behaviour.
STEP 5 — **Test your strategy**	You can conduct a small-scale test of the effectiveness of your chosen behaviour change tools. If the test is unsuccessful, you can use the data collected to try to uncover why and go back to one of the previous steps as necessary.
STEP 6 — **Implement and evaluate outcomes**	Once you have a strategy that tests well, this can be implemented on a larger scale and the overall outcomes can be evaluated. Monitor and measure your outcomes. Consider using alternative tools if your objectives have not been met.

See also McKenzie-Mohr 2000, McKenzie-Mohr and Smith 1999, Peattie 1999, Peattie and Peattie 2004, for general steps in the social marketing process.

Once you have identified the behaviour to be changed and have identified the key barriers to sustainable behaviour change (see McKenzie-Mohr 2000; Peattie 1999), then you can select tools that address the key barriers that seem most appropriate in the given context. In terms of Step 4, we suggest selecting influence tools that reflect the behaviour, the target consumer segment and the behavioural barriers linked to the behaviour. Moreover, we suggest focusing in particular on what the primary and the secondary barriers to engaging in the behaviour are. In line with past theorising, we note that there is often more than one barrier to behavioural change and that it can be effective to use a combination of strategies to influence behavioural change (e.g., Osterhus 1997). In Exhibit 16, we give examples of different desired sustainable consumer behaviours as a function of the primary barrier to behaviour change and the secondary barrier to behaviour change. And in Exhibit 17, we draw on examples of how the different behaviour change tools might be used in response to each combination of primary and secondary barriers. Note that these are examples only and that different consumers and different target markets will have different barriers to behavioural change. Thus, it is very important to understand your target market before selecting specific tools.

It can be effective to use a combination of strategies to influence behavioural change.

In the example presented earlier in Exhibit 3, based on our research into the target market, we found that the two biggest barriers to engaging in different types of composting and grasscycling were related to factors that were both social (the social norm conveyed that nobody else was doing the behaviour and that the status quo was normatively approved of) and individual (the required behaviours were perceived to be costly to the self). In this study, we developed two different solutions that addressed these key barriers. First, we found that highlighting social norms was very effective when the consumer was primed to think at the level of the collective self instead of the individual self ("Think about how we as community can make difference"). By making the self-focus more linked to the collective self, this made the self-focus compatible with adhering to social norms. Second, we found that highlighting relevant self-benefits worked best when the individual was primed to think about the individual self ("Think about how you as an individual can make a difference"). By matching the self-focus (collective or individual) to the type of appeal (normative or self-benefit), we were able to overcome the key barriers which were social norms and the individual self, and we were able to increase composting behaviours. Please see Exhibit 14 for an example of the materials used in this study.

EXHIBIT 14.
EXAMPLE OF MARKETING MATERIALS TO COMMUNICATE ABOUT THE COLLECTIVE SELF, COMBINED WITH DESCRIPTIVE NORMS

from White and Simpson 2013

Group / Benefit

Individual / Descriptive Norm

EXHIBIT 15.
EXAMPLES OF CLIMATE LABELS FROM OUR HORIZON

permission granted,
from Rob Shirkey

In another example, Our Horizon is a non-profit organisation (ourhorizon.org) that seeks to encourage a decrease in petrol consumption from driving cars. Two key barriers to decreasing the frequency and amount of driving are related to a) social norms that support the undesirable behaviour (the primary barrier being social) and b) uncertainty and lack of clarity around the outcomes of behaviour change (the secondary barrier being tangibility). In response to this, Our Horizon has developed a strategy to change what the perceived social norm is and to make the outcomes of behaviours very clear and tangible. In particular, Our Horizon has been working to encourage municipal governments to put warning labels on petrol pumps, similar to the way many countries have implemented warning labels on cigarette packaging. In doing so, Our Horizon is addressing the social barrier by conveying that driving cars is not necessarily normatively approved of and is addressing the tangibility barrier by communicating clear and local impacts of both action and inaction (please see Exhibit 15 for example).

In another example, actions like turning down the thermostat are often driven by both habit and lack of clarity of outcomes. One interesting example of a solution for consumers is the Nest thermostat. The Nest thermostat (https://nest.com/thermostats/) creates positive habits via ease of use (it can be set from your phone and also learns and adjusts to the consumer's behavioural pattern) and provides feedback on energy savings. The feedback function also serves to address the tangibility problem by giving consumers clear information about what effects their actions have.

Ensure that the tools selected are congruent with one another rather than contradictory.

In a last example, if the goal were to encourage consumers to switch from the traditional disposable diaper to a more eco-friendly version, two strong barriers to behaviour change might be related to barriers concerning tangibility and self-interests. Indeed, because there is a great deal of conflicting information in the marketplace about what type of diapers are best in terms of sustainability, there is a lot of uncertainty of outcomes associated with behaviour change. Moreover, changing to options touted as being more eco-friendly, such as using cloth diapers, can be perceived as being very costly and inconvenient to the individual self. In one example, a brand called "g diapers" (https://www.gdiapers.com/) makes washable and reusable diapers that are just as convenient and easy to use as regular disposable diapers. The brand overcomes the costs to the self by including compostable inserts that make the reusable main diaper more convenient for use. In addition, they overcome the problem of uncertain outcomes by clearly outlining the ways their company makes a difference. One way of doing this is by providing information regarding third-party certifications and on the specific ways in which the product can lead to fewer negative environmental impacts, thereby increasing the perceived clarity and tangibility of how the product can make a difference.

Thus, thinking about the primary and secondary barriers to sustainable consumer behaviour is one way in which the SHIFT framework could be used by practitioners to influence sustainable consumer behaviours. That being said, there is a caveat here, which is that the practitioner should ensure that the tools selected are congruent with one another rather than contradictory. For example, in our own research, highlighting the individual self and social norms was not as effective as highlighting the individual self and self-benefits (or the collective self and social norms), presumably in part because congruent messaging is more effective than incongruent messaging (see also White et al.

2011; White and Simpson 2013). Moreover, other research suggests that communicating both intrinsic, internally motivated and extrinsic benefits of sustainable actions at the same time is less effective than focusing solely of intrinsic benefits, in part because the extrinsic motives can undermine intrinsic ones (Bolderdijk et al. 2012; Edinger-Schons et al. 2018). Thus, communicating in ways that lead to consistent rather than inconsistent motives is likely to be a successful strategy. We note that another way in which to use the framework is to think about the specific benefits of your product and who it would best appeal to. One final way to use the framework is to highlight the benefits of your product or service in ways that will resonate with the relevant target market.

In sum, we have outlined a series of five principles that can be embraced to influence sustainable consumer behaviours. We do so by developing a framework that highlights tools practitioners can use. We use the acronym SHIFT to highlight that the key drivers of sustainable consumer behaviour are linked to social factors, habit formation, the individual self, feelings and cognition, and tangibility. We hope the framework will guide practitioners interested in fostering sustainable consumer behaviour and encourage the use of novel and effective tactics to encourage sustainable consumption.

EXHIBIT 16.

EXAMPLES OF DESIRED BEHAVIOURS AS A FUNCTION OF PRIMARY AND SECONDARY BEHAVIOURAL BARRIERS

Primary Behavioural Barrier	Secondary Behavioural Barrier: S Social	H Habit formation	I Individual self	F Feelings and cognition	T Tangibility
S	*	**Recycling** Driven by social norm and habit	**Composting** Driven by social norms and inconvenience to the self	**Decreasing air travel** Driven by spending time with family and positive feeling of the original action	**Decreasing disposable water bottle use** Driven by social norms and tangibility of outcomes
H	**Using a reusable coffee cup** Driven by habits and social norms	*	**Using alternative transportation** Driven by habit and self-interest	**Driving more efficiently** Driven by habit and feelings associated with driving inefficiently	**Turning down the thermostat** Driven by habit and clarity of outcomes
I	**Being vegetarian** Driven by individual preferences/norms and what family and friends do	**Using a reusable shopping bag** Driven by perceived cost to self and habit	*	**Purchasing an electric car** Driven by perceived costs to self and by feelings of autonomy associated with driving	**Purchasing offsets when travelling** Driven by personal norms to self and perceptions of clear outcomes
F	**Purchasing sustainable cosmetics** Driven by cognition about the social desirability of product ingredients	**Riding a bike to work** Driven by feelings of guilt and responsibility and by habit	**Purchasing energy-efficient appliances** Driven by thoughts about attributes and by perceived self-benefits	*	**Choosing a green energy provider** Driven by cognitions about attributes and clarity of outcomes
T	**Purchasing sustainable/used clothing** Driven by perceptions of outcomes and what other people will think	**Switching to washable diapers** Driven by perceptions of outcomes and habit	**Purchasing sustainable/fair-trade products** Driven by clarity of effectiveness and beliefs about self-benefits	**Purchasing organic food** Driven by clarity of effectiveness and cognitions about health and sustainability	*

EXHIBIT 17.

EXAMPLES OF SELECTED STRATEGIES BASED ON THE SHIFT FRAMEWORK

Primary Behavioural Barrier	Secondary Behavioural Barrier: Social	Habit formation	Individual self	Feelings and cognition	Tangibility
S Social	*	**S:** Show others engaging in the desired sustainable behaviour in public settings + **H:** Give individual or comparative peer feedback on performance	**S:** Communicate about relevant descriptive and injunctive social norms + **I:** Prime individuals to think of the self as part of a collective	**S:** Communicate new ways/norms around spending time with family + **F:** Show that special moments/positive emotions can occur on "staycations" too	**S:** Communicate new descriptive and injunctive norms + **T:** Make behaviours and outcomes very tangible and clear
H Habit formation	**H:** Shape positive behaviours using rewards + **S:** Make the action positive and observable to others	*	**H:** Use discontinuity to break bad habits (e.g., change transport for one week) + **I:** Highlight benefits to the self in ways that overcome barriers	**H:** Shape positive behaviours with rewards and feedback + **F:** Subtly activate feelings of guilt	**H:** Use prompts and feedback to shape habits + **T:** Make behaviours and outcomes very tangible and clear
I Individual self	**I:** Make the action appealing to self-interest + **S:** Communicate positive norms around the behaviour	**I:** Increase convenience to the self + **H:** Use rewards and prompts to shape the desired behaviour	*	**I:** Decrease perceived costs to the self + **F:** Create positive feelings around the new option/ behaviour	**I:** Activate personal norms and values + **T:** Communicate clear and tangible outcomes
F Feelings and cognition	**F:** Communicate the benefits of product ingredients + **S:** Increase the social desirability of the option	**F:** Subtly activate guilt by activating self-standards + **H:** Use rewards to shape desired behaviours	**F:** Create cognitions by educating on sustainable attributes + **I:** Highlight the self-benefits of purchase	*	**F:** Create cognitions via education + **T:** Communicate clear and tangible outcomes
T Tangibility	**T:** Communicate clear and tangible outcomes + **S:** Communicate positive social norms	**T:** Communicate clear and tangible outcomes + **H:** Use rewards to shape positive behaviours	**T:** Communicate clear and tangible outcomes + **I:** Highlight either benefits to self or personal norms around helping	**T:** Communicate clear and tangible outcomes + **F:** Create relevant cognitions about attributes	*

EXHIBIT 18.
INFORMAL ANALYSIS: LICENSING VS CONSISTENCY EFFECTS

	Consistency	Title	Description
1	Thøgerson and Crompton, 2009	Simple and painless? The limitations of spillover in environmental campaigning.	Engaging in a sustainable consumer behaviour at one time can lead to other positive sustainable behaviours.
2	Aitken et al., 1994	Residential water use: Predicting and reducing consumption.	Those with high water use who received feedback actually engaged in more water conservation at a later point in time.
3	Lanzini and Thøgersen, 2014	Behavioural spillover in the environmental domain: An intervention study.	Field study finds positive spillover from "green" purchasing to other behaviours, but mostly low-cost behaviours.
4	Juhl et al., 2017	Will the consistent organic food consumer step forward? An empirical analysis.	Tendency to buy organic products in an increasing number of product categories over time, demonstrating a spillover and consistency effect.
5	Thøgersen, 1999	Spillover processes in the development of a sustainable consumption pattern.	Behavioural effect of positive spillover: recycling shown to positively correlate with avoidance of excess packaging.
6	Berger, 1997	The demographics of recycling and the structure of environmental behaviour.	Recycling shown to positively correlate with energy conservation, water conservation, composting and use of reusable bags.
7	Whitmarsh and O'Neill, 2010	Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours.	Likelihood of performing one behaviour is positively related to the likelihood of performing other behaviours in that cluster.
8	Willis and Schor, 2012	Does changing a light bulb lead to changing the world? Political action and the conscious consumer.	Positive relationships between pro-social consumer behaviours and environmental policy support.
9	Thøgersen and Noblet, 2012	Does green consumerism increase the acceptance of wind power?	Positive relationships between pro-social consumer behaviours and environmental policy support.
10	Van der Werff et al., 2013	The value of environmental self-identity: The relationship between biospheric values, environmental self-identity and environmental preferences, intentions and behaviour.	People who were reminded of their previous performance on a range of pro-environmental behaviours (PEBs) were more likely to make "green" product decisions, as compared to those who were reminded of environmentally unfriendly actions.
11	Harland et al., 1999	Explaining pro-environmental intention and behavior by personal norms and the theory of planned behavior.	Use of energy-saving light bulbs and use of unbleached paper were significantly correlated with one another.
12	Bratt, 1999	The impact of norms and assumed consequences on recycling behavior.	Likelihood of performing one behaviour was positively related to the likelihood of performing other behaviours in that cluster.
13	Tobler et al., 2012	Addressing climate change: Determinants of consumers' willingness to act and to support policy measures.	Correlations between clusters of PEBs and between PEBs and policy support.
14	Thøgersen and Ölander, 2006	To what degree are environmentally beneficial choices reflective of a general conservation stance?	Common motivational causes such as environmental values and environmental concern can account for the significant partial correlations between behaviours such as recycling, buying organic food products and using public transport or bicycles.

15	Thøgersen and Ölander, 2003	Spillover of environment-friendly consumer behaviour.	Recycling behaviour measured at wave 1 correlated positively with purchasing organic products at wave 2.
16	Cornelissen et al., 2008	Rules or consequences? The role of ethical mind-sets in moral dynamics.	Positive environmental outcomes of behaviour lead to seeing oneself as the type of person who is concerned about environmental issues. This identity makes people more likely to engage in subsequent PEBs.

	Commitment		
1	Bodur et al., 2015	Will you purchase environmentally friendly products? Using prediction requests to increase choice of sustainable products.	Making personal commitments to engage in a behaviour or event predicting one's future behaviours at one point in time can also increase sustainable behaviours in the future.
2	Katzev and Johnson, 1984	Comparing the effects of monetary incentives and foot-in-the-door strategies in promoting residential electricity conservation.	Homeowners who made a commitment or made a commitment and filled in a survey conserved more electricity than those who only filled in a survey or were offered an attractive monetary incentive.
3	Pardini and Katzev, 1983	The effect of strength of commitment on newspaper recycling.	Private commitments have been shown to be more compelling predictors of behaviour when they are made in writing.
4	Werner et al., 1995	Commitment, behavior and attitude change: An analysis of voluntary recycling.	Private commitments have been shown to be more compelling predictors of behaviour when they are made in writing.
5	Bamberg, 2002	Effects of implementation intentions on the actual performance of new environmentally friendly behaviours – results of two field experiments.	Tying a commitment to implementation intentions can be an effective means of encouraging sustainable consumption.

	Cleansing	**Title**	**Description**
1	Dickerson et al., 1992	Using cognitive dissonance to encourage water conservation.	Reminding consumers of a time when their behaviour was not consistent with their personally held beliefs can also make consumers more likely to subsequently engage in sustainable consumption behaviours such as water conservation.
2	Peloza et al., 2013	Good and guilt-free: The role of self-accountability in influencing preferences for products with ethical attributes.	Reminding consumers of a time when their behaviour was not consistent with their personally held beliefs can lead to them choosing green products.

	Licensing	Title	Description
	Negative spillover		
1	Barr et al., 2010	"A holiday is a holiday": practicing sustainability, home and away.	The most environmentally inclined participants at home are also the most likely to use carbon-intensive modes of transportation on holidays.
2	Miller et al., 2007	Public understanding of sustainable leisure and tourism: a report to the Department for Environment, Food and Rural Affairs.	People did not feel a need to be environmentally friendly on holiday if they performed PEBs at home.
3	Tiefenbeck et al., 2013	For better or for worse? Empirical evidence of moral licensing in a behavioral energy conservation campaign.	Residents who received weekly feedback on their water consumption lowered the amount of water consumed by 6% but significantly increased their energy use by 5.6% over the control condition.
4	Thøgersen, 1999	Spillover processes in the development of a sustainable consumption pattern.	Engagement in an initial PEB led to a reduction in the perception that one is obligated to perform a PEB.
5	Sachdeva et al., 2009	Sinning saints and saintly sinners: The paradox of moral self-regulation.	Calling attention to an individual's own pro-social actions reduced their subsequent support of local anti-pollution measures.
6	Mazar and Zhong, 2010	Do green products make us better people?	Engaging individuals in green behaviours reduced subsequent co-operative actions and licensed individuals to lie and steal when subsequently tempted.
7	Klöckner et al., 2013	Energy efficiency in Norwegian households – identifying motivators and barriers with a focus group approach.	Norwegian owners of electric cars felt less moral obligation to act in pro-environmental ways compared to owners of conventional cars.
8	Khan and Dhar, 2006	Licensing effect in consumer choice.	Imagining performing a pro-social behaviour increased people's sense of a positive self-concept which in turn was related to future frivolous self-indulgent purchases.
9	Cornelissen et al., 2013	Rules or consequences? The role of ethical mind-sets in moral dynamics.	Recalling performing an ethical (versus unethical) act was related to cheating.
10	Thøgersen and Ölander, 2003	Spillover of environment-friendly consumer behaviour.	Purchasing organic products correlated negatively with later recycling behaviours.
11	Baca-Motes et al., 2013	Commitment and behavior change: Evidence from the field.	A recent study of hotel guests' towel reuse found limited evidence for positive spillover following a commitment.
12	Garvey and Bolton, 2017	Eco-product choice cuts both ways: How pro-environmental licensing versus reinforcement is contingent upon environmental consciousness.	Making a sustainable product choice (e.g., selecting LED light bulbs or biodegradable paper towels) undermines subsequent pro-environmental behaviours among individuals weak on environmental consciousness, but enhances subsequent pro-environmental behaviour among individuals strong on environmental consciousness.

	Licensing	Title	Description
	Rebound		
1	Binswanger, 2001	Technological progress and sustainable development: what about the rebound effect?	Increase in energy usage that sometimes follows efficiency improvements.
2	Hirst et al., 1985	Indoor temperature changes in retrofit homes.	Households that “weatherise” their homes tend to increase their thermostat settings during the winter.
3	Jacobsen et al., 2012	The behavioral response to voluntary provision of an environmental public good: Evidence from residential electricity demand.	Voluntary participation in a green power programme increased subsequent household electricity consumption.
4	Gillingham et al., 2013	Energy policy: The rebound effect is overplayed.	Licensing effects displace only a small fraction of technologically achieved savings.
5	Greening et al., 2000	Energy efficiency and consumption – The rebound effect – A survey.	Licensing effects displace only a small to moderate fraction of technologically achieved savings.
6	Sorrell, Dimitropoulos, and Sommerville, 2009	Empirical estimates of the direct rebound effect: A review.	Improving the efficiency of heating and air conditioning can lead consumers to increase their usage.
7	Catlin and Wang, 2013	Recycling gone bad: When the option to recycle increases resource consumption.	People use increased amounts of paper when the option to recycle is made salient.
8	Small and Van Dender, 2007	Fuel efficiency and motor vehicle travel: the declining rebound effect.	Improving petrol economy can have the unintended consequence of consumers subsequently driving more miles.

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What should I say to someone to convince them to install solar panels in their home? How can I persuade someone to consider vegetarian food? What are the challenges in getting someone to buy fewer clothes?

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