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Understanding the inherent complexity of sustainable consumption: A social cognitive framework ☆

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ABSTRACT

This article explores the potential of a theoretical framework, based on social cognitive theory (SCT), to inspire future research into sustainable consumption. The SCT framework provides a dynamic perspective on sustainable consumption through exploring the interactive nature of personal, environmental and behavioral factors of consumption. The SCT framework, which builds on prior theoretical models of sustainable consumption, incorporates the concept of reciprocal determinism, wherein personal, environmental and behavioral factors create a feedback loop to influence each other. Two examples, toy sharing in New Zealand and water conservation in Australia, illustrate the dynamic nature of sustainable consumption and the potential of an SCT based framework to provide a more nuanced view of behavioral change in this context. From these two examples, several ideas for future research emerge to help illustrate the potential of SCT to inform and inspire the next wave of research on sustainable consumption.

"The common conception is that motivation leads to action, but the reverse is true — action precedes motivation. You have to prime the pump and get the juice flowing, which motivates you to work on your goals. Getting momentum going is the most difficult part of the job, and often taking the first step is enough to prompt you to make the best of your day." — Robert McKain, author

1. Introduction

This article defines sustainable consumption as consumption that simultaneously optimizes the environmental, social, and economic consequences of acquisition, use and disposition in order to meet the needs of both current and future generations (Luchs et al., 2011). The general consensus globally is that sustainable consumption is desirable, important and necessary (EcoPinion, 2009; Nielsen, 2011), but these positive attitudes do not necessarily translate into sustainable consumption behaviors (Prothero et al., 2011). This article proposes adopting a generalized framework based on social cognitive theory (SCT), an underutilized theory in marketing research, as an avenue to further develop an understanding of the factors influencing sustainable consumption.

The impetus for this article was the 2011 Transformative Consumer Research (TCR) conference and, more generally, the call to action by David Mick to advance an understanding of practical problems in order to make a positive difference in the lives of consumers (Mick, 2006). In addition, the article adopts the challenge from Kilbourne and Mittelstaedt (2012) and McDonagh, Dobscha, and Prothero (2012) to infuse a sustainability perspective into the core values of TCR through a focus on sustainable consumption. The authors concur with that suggestion and attempt to advance the understanding of sustainable consumption by using an SCT-based framework.

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SCT is unique in focusing on the role of behavior as not just an outcome, but also as a determinant of other factors. SCT suggests that "…human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (Bandura, 1986, p.18). Originally developed in social psychology, SCT has received limited attention within the marketing field, with only two studies in the major marketing journals referencing the theory (Dellande, Gilly, & Graham, 2004; White, MacDonnell, & Dahl, 2011). Furthermore, prior studies across the marketing field only address specific aspects of SCT such as the personal factor self-efficacy (Wang & Netemeyer, 2002) or the influence of others (Dellande et al., 2004), rather than the entire model. Core concepts within the SCT framework, in particular reciprocal determinism, have not been explicitly explored within the marketing literature. In essence, SCT challenges researchers to examine the interdependency of the three general factors in the model – personal, environmental, and behavioral – and, most importantly, probe how behavior can influence both personal and environmental factors in a recursive fashion.

Using Bandura's social-cognitive theory as a novel and useful starting point, the article develops a framework intended to guide future research in sustainable consumption. The framework is not intended to serve as a fully specified theory for purposes of prediction or explanation. Rather, similar to the approach of Epp and Price (2008) to stimulating research on consumption aspects of family identity, the goal of the proposed SCT-based framework is to capture the complexity of factors underlying sustainable consumption behaviors and to provide a heuristic model that can be used to suggest interesting topics for future research. The first section of this article reviews some key theoretical models that have been used to understand sustainability related consumption behaviors. The second section highlights the key contribution of SCT – reciprocal determinism – whereby past behavior can influence both personal and environmental factors and, in turn, affect future behaviors. The third section demonstrates the dynamic nature of sustainable consumption behavior and the usefulness of SCT in advancing understanding through two examples: sharing within toy libraries in New Zealand and water conservation in Australia. The final section shows how revisiting prior theories in light of the SCT framework helps identify new opportunities for research. Thus, this work intends to encourage a new approach to sustainability research that incorporates a more dynamic and integrated perspective on sustainable consumption.

2. Models of sustainable consumer behaviors

Previous research has explored sustainable consumer behavior by considering the same factors that affect consumer behavior in other contexts. These perspectives range from simple models of rational choice to complex attribute-based models. For instance, many models of environmentally significant behavior build on existing theories such as expectancy-value theory. The basic tenet of expectancy values models is that people behave in order to maximize expected benefits from their actions (Jackson, 2005). Thus, consumers weigh the expected benefits of each decision versus the expected costs in order to determine which option provides the greatest value. However, environmentally significant behaviors are somewhat unique in that the behavior often involves making decisions with outcomes that affect the environment and/or others, either directly or indirectly. This section looks at the development of two of the better known models to illustrate how expectancy-value has evolved to incorporate morality based values (e.g., altruism) into an understanding of sustainable consumer behaviors, such as those focused on environmental issues. These models are Stern's (1999) Values–Beliefs–Norms model, and Ölander and Thøgersen's Motivation–Opportunity–Abilities (MAO) model. For a more detailed review, see Jackson (2005).

2.1. Value–Beliefs–Norms (VBN)

Paul Stern and his colleagues developed one of the better-known theories of environmentally significant behavior (Jackson, 2005; Stern, Kalof, Dietz, & Guagnano, 1995), Value–Beliefs–Norms (VBN) theory, which integrates Schwartz's (1973) moral norm activation theory, the theory of personal values and the New Environmental Paradigm (NEP). VBN's central premise is that pro-social beliefs and personal moral norms are significant predictors of pro-environmental behavior (Stern, 1999). The model states that if consumers hold strong altruistic and biospheric values, they are more likely to accept the beliefs of the NEP worldview. The NEP consists of a new set of values that pay respect to natural limits and the importance of preserving the balance and integrity of nature (Dunlap & van Liere, 1978). However, according to VBN, the stronger consumers' egoistic value orientation, the less likely they are to accept the NEP.

Research has shown that acceptance of the NEP correlates positively with awareness of the (environmental) consequences of one's actions, which in turn leads individuals to become aware of their responsibility to reduce those consequences (Jackson, 2005). These beliefs include beliefs about the consequences of different behaviors, both consequences for the environment and for oneself. Similarly, consumers' values may lead to rejection of the NEP and, therefore, contribute to beliefs that are counter to sustainable consumption — such as when consumers perceive sustainable products as inferior to traditional ones. Research has shown a potential stigma around environmentally friendly or recycled/refurbished products being perceived as less effective compared to traditional product alternatives (Luchs, Naylor, Irwin, & Raghunathan, 2010).

Further, according to the VBN, consumers develop personal norms based on their beliefs about who is responsible for given consequences of environmentally significant behaviors. This norm could entail a personal sense of obligation to take pro-environmental action (Stern, 2000) or a belief that others instead need to modify their behaviors. Norms can both facilitate (Thøgersen, 2005) or impede (Press & Arnould, 2009) sustainable consumption behaviors. The Value–Beliefs–Norms model consistently explains more variance in a range of environmental behaviors (including environmental citizenship, policy support and private sphere behaviors) than many competing theories (Stern, Dietz, Abel, Guagnano, & Kalof, 1999).

2.2. Motivation–Opportunity–Abilities (MAO)

While the VBN is one of the most consistent predictors of pro-environmental behaviors, others have since built on VBN to incorporate other factors. Ölander and Thøgersen's (1995) Motivation–Opportunity–Abilities (MAO) model builds on the motivation orientation of VBN to include the role of habits and task knowledge (i.e., ability) and situational conditions (i.e., opportunity), to identify potential constraints and enablers of sustainable behaviors.

The ability construct incorporates both a habit and task knowledge element. For example, individual consumers may face resource constraints in terms of time, money, cognitive capacity, or skill sets to achieve sustainable lifestyles. These constraints can force difficult trade-offs (Thøgersen, 2005).

The opportunity construct incorporates structural constraints. The decision to adopt pro-environmental behaviors such as reducing energy consumption or recycling is affected by the availability of appropriate infrastructure and facilities and sustainable options (Koos, 2011; Press & Arnould, 2009; Thøgersen, 2005). Even when sustainable options are available in the environment they can be expensive or difficult to locate compared to traditional products, thereby reducing sustainable consumption (Tanner & Kast, 2003). Thøgersen (2005) suggests that reducing the time and effort demanded to consume sustainably – in other words, changing environmental conditions – may be more important than pricing. Other external factors such as actions (or

inaction) by the government, businesses, and the culture can limit a consumer's freedom to choose sustainable options in some areas (e.g., availability of quality public transport, Thøgersen, 2005).

With respect to other situational factors, lack of clear information about the environmental impact of products through labeling can constrain sustainable consumption behaviors (Borin, Cerf, & Krishnan, 2011). Source and message credibility are also key issues since consumers have difficulty discerning what claims are legitimate (Manget, Roche, & Münnich, 2009). The MAO model demonstrates how models of pro-environmental behavior have been able to build on prior work such as VBN to incorporate factors – such as situational constraints – that are important to sustainability contexts. Although these programmatic research efforts have significantly enhanced understanding of the determinants of sustainable consumer behaviors, the framework in this article provides an important new perspective by adopting the logic of reciprocal determinism, as suggested by Bandura's social cognitive theory.

3. Moving to a new understanding of sustainable behaviors

Both the VBN and MAO models implicitly suggest that different levels of antecedents ultimately cause certain behavioral outcomes in a primarily linear, serialized process. For instance, the VBN model conceptualizes behavior as resulting from personal norms that, in turn, are developed from the antecedents of values and beliefs. While this linear approach has contributed much towards an understanding of sustainable behaviors, this article intends to move beyond this approach to one where behavior provides feedback to all antecedents of behavior, as well as influences future behavioral outcomes. Thus, behavior should not be viewed as just an outcome, but also as a determining variable.

One alternative understanding of behavior stems from social learning theory. Bandura (1977) proposes that various forms of social learning continually complement experiences in real life. In addition to direct experiences, consumers learn by observing others around them, such as parents, peers and those portrayed in the media (Bandura, 1977). Further, Bandura argues that behavior can influence other factors, such as a personal sense of self-efficacy (Bandura, 1997), which also influence subsequent behaviors in an ongoing feedback loop. This article generalizes the perspective and logic of SCT to ask how behavior can influence both personal and environmental factors and, in turn, affect future behaviors.

3.1. Introducing social cognitive theory and reciprocal determinism

At its core, SCT views individuals as agents capable of exercising some measure of control over their own functioning and other environmental events (Bandura, 1997; Bandura, 2001a). Within SCT, behaviors are determined by, and in turn affect, both personal and environmental factors (See Fig. 1). For example, one's interpretation of his own behavior may impact beliefs of self-efficacy or competence (personal factors), which in turn affect subsequent behavior. Similarly, behavior may be affected by environmental factors, such as social or situational influences, and also alter the environment itself (e.g., social norms).

Bandura refers to personal, behavioral and environmental factors as interlocking pieces, which cannot be contemplated in isolation. Internal factors "provide only potentialities" but not the finished behaviors (Bandura, 2001a, p. 23). Consumers are thus producers of behaviors, yet are also the product of their environment and of their past behaviors (Bandura, 2001a). Bandura defines this dynamic perspective of behavior as reciprocal determinism. Reciprocal determinism explores the link between personal agency and social structure. In reciprocal determinism, "personal agency and social structure operate as co-determinants in an integrated structure rather than as a disembodied duality" (Bandura, 2001b, p. 266). Therefore, past behavior can influence future behavior, as well as personal and environmental factors. As Fig. 1 illustrates, the

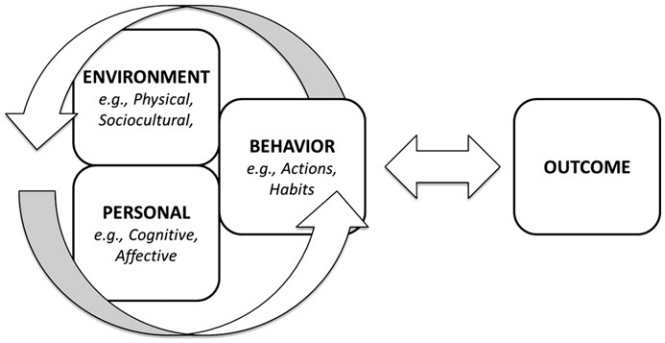

Fig. 1. Social cognitive theory and reciprocal determinism.

outcomes from the three factors also act as inputs on future behavior. However, Bandura posits that the personal locus in the model (self-efficacy, cognitive and motivational skills, self-reflective and self-regulatory processes) is central to the functioning of reciprocal determinism. "Given the same environmental conditions, persons who are adept at regulating their own motivation and behavior are more successful in their pursuits" (Bandura, 1989, p. 1192).

Further, the reciprocal determinism concept of SCT illustrates how consumers receive feedback from both tangible outcomes (e.g., economic benefits) and feelings (positive and negative) that arise from past behaviors (Bandura, 1986). For example, consumers who purchase a hybrid vehicle may consider both the tangible outcomes (e.g., tax breaks, savings on gas expenditures), as well as the feelings (e.g., a sense that they have done their part to help the environment) that stem from previous purchases when contemplating subsequent behaviors.

Researchers have used the feedback loop of reciprocal determinism in the social learning literature – from higher education learning and student self-regulation to children's dietary choices and the learning of aggression – and have applied the concept to the complex determinants of organizational behavior and human resources, interventions in areas such as drug use, sexual behaviors and healthy community choices, and, to a limited degree, sustainable consumption behaviors, such as the adoption of energy-efficient practices (e.g., Thøgersen & Grønhøj, 2010).

One of the advantages of the social cognitive framework is that the model offers insight into how difficult sustainable trade-offs may be overcome. According to Bandura, people can regulate their behavior through internal standards and self-evaluative reactions to their own behavior; thus, behavior feeds back and informs personal level factors (Bandura, 1986). This feedback loop resonates with some of the key issues of sustainability research. Sustainability research has sought to understand how beliefs about the effectiveness of near-term actions may affect future generations and therefore impact consumer behaviors (Cotte & Trudel, 2009; Thøgersen & Grønhøj, 2010). While some prior research has implicitly acknowledged the importance of this feedback process, a need exists to significantly expand on this perspective. This article addresses two critical feedback loops within the SCT framework; 1) past behavior affecting future behavior, and 2) behavior affecting both personal and environmental factors.

3.2. Past behavior affects future behavior

Research into how sustainability related consumption behaviors affect future behaviors has been limited, but a number of observed effects illustrate the potential of this perspective and the importance for further studies. For example, research into spillover effects show how pro-environmental behavior in one area has the potential to leak into, or spill over, into another area (Thøgersen & Crompton, 2009; Verplanken, Aarts, & Van Knippenberg, 1997). However, researchers have observed a licensing effect whereby pro-environmental behavior leads to activations of anti-environmental behaviors (Khan & Dhar,

2006; Mazar & Zhong, 2010). Simply put, consumers may treat pro-environmental behaviors as an excuse to engage in less eco-friendly practices later on (Bolton, Cohen, & Bloom, 2006). An example is the increased paper usage that arises when the option to recycle paper waste is salient (Catlin & Wang, in press). Problematically, these anti-environmental behaviors can also become habitual, making behavior change more difficult and preventing the adoption of pro-environmental behavior (Jansson, Marell, & Nordlund, 2010). Further understanding of these behavior-on-behavior effects and their potential to influence sustainable consumption would be valuable.

3.3. Behavior affects personal and environmental factors

Reciprocal determinism shines a new light on models such as the VBN and MAO. If feedback is incorporated into the VBN model, established norms would have the potential to indirectly influence personal beliefs, such as an individual's awareness of consequences as well as their attribution of responsibility, through their direct effects on behavior. With respect to the MAO model, feedback from behavior has the potential to, for example, enable consumers to learn from and to overcome situational constraints. Further research that takes into account this more complex understanding of behavior is necessary.

This feedback loop can also run counter to sustainable consumption via influence on personal and environmental factors. In other words, the SCT framework suggests that behavior affects other factors — sometimes in good ways, other times not. Thus, reciprocal determinism does not necessarily predict a positive effect, rather only that a relationship with other factors exists. For example, increased efficiency in consumption may establish a new norm of increased consumption. The rebound effect describes how reduced price can lead to increased demand. The implication for sustainability is that improved consumer outcomes, perhaps due to technological advances, have the potential to produce unintended consequence of increased usage. Small and Van Dender (2007) show that improved gas mileage can be offset by increased miles driven. Similarly, more efficient heating and air conditioning can lead to increased use of these units (Sorrell, Dimitropoulos, & Sommerville, 2009).

Phenomena such as spillover, licensing and the rebound effect illustrate the importance of reciprocal determinism in models of sustainable consumption behavior. However, despite the relevance of feedback, limited research has explored consumer behavior from this perspective. To enable a subsequent elaboration of how this more nuanced view of consumer behavior can motivate future research, the following section reviews two examples that illustrate how feedback effects enable sustainable consumption behavior change.

4. Two examples to illustrate a social cognitive framework

The following section provides two examples of sustainable consumption practices, sharing and conserving, which provide a context to illustrate how the personal, behavioral, and environmental aspects of consumption interact and how SCT provides a framework for understanding the inherent complexity of these relationships. Although prior theory can explain some of the consumption behavior in the two examples, the lens of reciprocal determinism reveals a richer and more nuanced picture.

4.1. Toy library sharing

Sharing products is a practice that can enable consumers to reduce their environmental footprint as the need to purchase new goods is reduced. According to Gansky (2010), the sharing economy has the potential to expand rapidly. Potential sharing platforms already exist in many consumer product markets. The following example explores sharing as the practice that occurs between members of community toy libraries in New Zealand (see Ozanne & Ozanne, 2011, for detailed discussion of this study).

Community toy libraries allow volunteer members to borrow communally owned toys for fixed borrowing periods in return for membership fees and a commitment to participate in library support duties. As New Zealand's parents approach the challenging life stage of raising children, they find that toy library participation is facilitated by the wide availability of libraries in New Zealand. The environmental conditions of use are further enhanced as toy libraries tend to be located in the center of the community and are easy places to bring the whole family. Thus, the physical environment enables both the behavior and the social environment.

As toy libraries commonly promote economic reasons for membership, understandably members' initial outcome expectations include practical reasons such as saving money, gaining access to a wide array of toys, and trying before buying. Sharing in the toy library provides a unique context as the sharing is being performed to meet the needs of others (one's children), meaning that the social environment plays an important role. Both parents often make the decision to participate, anticipating positive outcomes for children such as providing access to a range of developmentally appropriate toys. In this way, outcome expectations influence the social environment, which in turn influences behavior (See Fig. 1).

Although initial outcome expectations are quite modest, as toy library use increases members report a multitude of unexpected benefits that reinforce future use. Thus, the behavior enables rethinking of personal motivations that can reinforce future behavior as SCT suggests. For instance, some parents discover a community of like-minded parents sharing similar values, and some members describe how the toy library experience expands to become a space for children to learn the values of sharing, responsible use, and respect for other users. This change occurs as parents and children learn by observing the behavior of others. Parents describe a supportive social environment that facilitates greater acceptance of toy sharing.

Through toy sharing, parents are able to contrast the pain they often experience in shopping for toys with the pleasure of sharing, and thus some parents choose to minimize toy shopping through regular borrowing. Other parents determine they can use the toy library to mediate the influence of the marketplace on their children (Ozanne & Ozanne, 2011). In all of these examples, one's own past behavior, and also the behavior of others, influences future behavior, as personal beliefs and attitudes about toy shopping and sharing are modified and parents gain a deeper understanding of the community nature of toy sharing.

Through the act of sharing, some parents realize the practice supports their value priorities, such as environmentalism, frugality, anti-consumption, and volunteering (Ozanne & Ballantine, 2010), and also provides a mechanism to impart these values to their children, further strengthening the practice. As children age, parents find that usage of the toy library can evolve as the needs of the children change; some children begin to appreciate the social aspects of the sharing community, and others advance developmentally by borrowing more advanced toys. These unanticipated benefits of sharing reinforce future usage by altering parents' beliefs, shaping their social environment and reinforcing values, as the lens of SCT enables consumer researchers to now depict and understand. Many parents report that visiting the toy library becomes part of the Saturday morning routine that their children enjoy and anticipate. Herein, the social influence of the children also develops into an established norm. Thus, evidence shows that personal beliefs lead parents to participate. Participation surrounds these parents with an environment of like-minded individuals, thereby reinforcing their beliefs and promoting more sharing behavior.

Some toy library users explain that the experience of toy sharing spills over and influences other behaviors, such as participating in

book clubs, clothes swapping, car sharing, skill sharing, and gifting used toys and books. Members' personal values also change as they state that, if the toy library did not exist, they might purchase more toys, but they would also visit garage sales, try to swap more, and buy used products online to meet children's needs.

The toy libraries of New Zealand provide a useful case study of how a social cognitive framework can help us understand the close inter-relationship of behavioral, personal, and environmental factors underlying an important form of sustainable consumption, sharing. Reciprocal determinism suggests multiple entry points for interventions designed to move consumption to a more sustainable basis. The actions of a few sustainable consumption pioneers can lead to far-reaching changes in other consumers' behaviors, values, and attitudes toward consumption by making sustainable choices available in an otherwise hyper-consumption marketplace. Those second order effects can in turn change the social environment by promoting a new norm of sharing.

4.2. Household water conservation

Urban household water consumption is a complex consumption context that provides the opportunity to observe many examples of reciprocal determinism. Drought in Melbourne presents a context in which a severe ecological change becomes a catalyst for a broader change in sustainable consumption behaviors. During a recent drought the average water consumption in Melbourne dropped from a 1072 million liter daily city average to a 916 million liter daily city average (See Phipps & Brace-Govan, 2011, for detailed discussion of this study). Analyzing this change from an SCT perspective illustrates how environmental, personal, and behavioral factors can interact with one another to enable sustainable change.

By the winter of 2007, a prolonged 10-year drought led to the cancellation of recreational and sporting activities, an increase in food prices, and mandated limits on household water use. These macro changes led to a number of behavioral changes in how consumers source their water. Homeowners adapt by installing water conservation equipment in the form of rainwater tanks, graywater systems (i.e., the use of water for more than one purpose), and water efficient appliances, such as low flow showerheads and water smart dishwashers. The installation of new equipment and upgrading of appliances provides consumers with greater capacity to reduce their water use drawn from city mains. These behavioral changes enable greater self-evaluation, which in turn improves levels of perceived self-efficacy and alters outcome expectations.

Installing household rainwater collection systems creates individual water storage units that make monitoring water use easier, and thereby alter both consumers' levels of self-efficacy and outcome expectations. In this example, self-efficacy can increase when individuals have direct control over their own water storage and are able to evaluate the efficiency of their usage or behavior. Outcome expectations also are more accurate as consumers view the direct result of their water use through monitoring the amount of water they are able to store. This feedback encourages further behavioral change in a virtuous cycle, as enabled by reciprocal determinism in the SCT framework and shown in Fig. 1. Past behavior informs future behavior, via changes in beliefs and expectations, as consumers learn that they can control and limit their water usage. More ambitious water conservation goals seem reachable, thereby motivating consumers to continually strive to improve their water usage efficiency.

In this example, drought also significantly changes the social environment as the behavior of some consumers influences others. Water use becomes an important discussion topic in newspapers and between consumers. This shift in the social environment can facilitate the dispersion of water conservation information and, in Melbourne, lead to consumers observing one another's behavior. This heightened sense of social monitoring is particularly relevant among neighbors. Social pressure exists for households to demonstrate their low water use through visible symbols such as a dirty car, brown lawns, and the installation of a rainwater tank, with documented cases of abuse towards neighbors perceived to be overusing water. Thus, social environmental change instigates a rethinking of personal values among consumers and helps to facilitate further the uptake of new water conservation behaviors.

Significantly, these changes to personal and behavioral factors also interact with the social and physical environment. Shifted personal attitudes and behavior foster greater marketplace acceptance and encourage innovation in the development of rainwater tanks. Prior to the Melbourne drought, residents viewed rainwater tanks as symbols of a backwards, colonial past. However, changes in behaviors and attitudes, in combination with a more favorable social environment, facilitate greater acceptance of rainwater tanks. As demand for tanks grows, manufacturers have greater reason to innovate for this growing customer base. This innovation in turn fosters greater consumer acceptance as smaller and more modular rainwater tanks are created to fit into new household environments, which enables even further behavioral change.

The Melbourne water marketplace provides an illustration of how sustainable change can develop through the recursive relationship between environmental, personal and behavioral factors suggested by the SCT framework. While the drought created a macro physical environmental change that instigated a number of consumer responses, these behavioral changes further enabled a shift in sustainable consumption behavior as beliefs, perceived self-efficacy, social norms, and the consumer environment were altered. Thus, the SCT framework provides an avenue for understanding sustainable change over time in complex environments.

5. Opportunities for future research

Based on an appreciation of the SCT framework, revisiting prior theory is useful to expand the understanding of sustainable consumption and identify new opportunities for research. Since both VBN and MAO view behavior as a dependent variable and do not explicitly recognize the potential of reciprocal determinism, the valuable insight of the independent role of behavior, provided by SCT, reveals many potential research questions.

How are different stages of sustainable consumption related? For instance, how do specific stages of sustainable consumption – purchase, use and disposal – affect each other (e.g., does recycling behavior lead to more sustainable purchase decisions)? Consumers who perceive sustainable consumption as a way to provide opportunities for new behaviors rather than as a constraint on their behavior (Luchs et al., 2011) might choose, for example, to sell, share or gift used items. How might the desire to maintain resale or secondary value alter their use behavior? In addition, how might the need to provide appropriate rental goods that are durable and easy to use impact the acquisition behavior of consumers who participate in various forms of collaborative consumption (Botsman & Rogers, 2010), such as peer-to-peer renting? How might renting or sharing, in general, alter acquisition behavior, as seen in the toy library example where parents minimize trips to the toy store? Consumer researchers might explore how repair and maintenance behavior designed to extend product life affects future acquisition behavior. In addition, how do frequent, habitual sustainable behaviors, such as composting or recycling, impact infrequent behaviors, such as the purchase of a new car (a one-time behavior that might, in fact, have a much greater environmental impact) (Stern, 2000)?

When and how do sustainable consumption behaviors amplify, or attenuate, subsequent behaviors? When do current sustainable consumption behaviors lead to positive spillover and when, instead, do they provide consumers with a license to engage in potentially unsustainable consumption behaviors in the future? Consumer researchers might also investigate how observing others' sustainable

consumption behavior influences one's own behavior. For instance, in the toy library example, are children of toy library members more likely to participate in sharing or volunteering in the future? Does who one observes matter? How does the perceived similarity of the observed individual moderate the influence of observing them on the individual's behavior?

Future research should also explore how different types of pro-sustainability behaviors are related beyond sustainable consumption. Stern (2000) provides a useful categorization of environmentally significant behavior that suggests additional research questions; these categories include environmental activism (e.g., environmental demonstrations), non-activist behaviors in the public sphere (e.g., joining an environmental organization or signing a petition), private-sphere environmentalism (e.g., consumption behaviors), and other environmentally significant behaviors (e.g., influencing organizations in the workplace). Consumer researchers might examine how activist behaviors influence private-sphere behaviors and vice versa. In addition, an understanding of how non-activist behaviors, such as petitioning or blogging about an organization to encourage them to reduce environmental harm, affect private-sphere consumption behavior, such as boycotting products from that organization, would be valuable. Finally, research should explore how consumers' private-sphere behaviors encourage other environmentally significant behaviors, such as influencing environmental policy in the workplace.

SCT allows researchers to ask how sustainable consumption behaviors affect values. Reconsidering VBN and MAO, SCT and reciprocal determinism provide an additional layer for researchers to explore and expand an understanding of sustainable consumption. As an example, many parents perceive the toy library as a tool to socialize their children and impart key values, such as sharing, and responsible use and respect. A subsequent study might examine whether these values have in fact developed in children who share in this manner. Has sharing in the toy library reduced materialistic values in children, or has the regular access to an abundance of toys actually increased materialistic and egotistical values? Understanding how the toy library has mediated the influence of the marketplace, as parents hope, and if the library has created a more ecological worldview in their children can be driven by SCT approaches.

How sustainable consumption behaviors affect personal level factors is also important to explore. Consumer researchers can examine how participating in sustainable consumption behaviors may alter consumers' beliefs about potential adverse consequences to the environment and perceptions of their ability to reduce the threat of harm through their consumption actions or their feelings of self-efficacy. For instance, do consumers learn about their own ability to affect environmental change from experienced successes and failures? Future research could investigate how active self-evaluation, such as direct control over one's water storage in the Melbourne water example, affects motivation and other personal factors. How might participating in sustainable consumption behaviors influence consumers' personal norms or feelings of obligation to take environmental action? Researchers should question whether participating in environmental consumption, such as a swapping party, might increase an ability to participate as consumers acquire more task specific knowledge (e.g., how to host a swapping party) or if participation illuminates additional opportunities to swap (e.g., a technology mediated marketplace such as swap-online.com). Additionally, SCT provides a lens for understanding how the behavior of environmental market mavens influences the values, beliefs, norms and motivation of other consumers.

The theories of VBN and MAO are just two theories that might benefit from reconsideration within the framework of SCT. The point of this discussion is not to suggest that prior theory is wrong, but instead that such theory is still incomplete. Researchers must continue the momentum of the past by continually building upon extant theory in an effort to both inform and to motivate future research. Thus, this article provides a logical next step in theory building in the context of sustainable consumption towards an even more holistic model in which researchers view consumption behavior and its antecedents as a perpetual, reciprocally deterministic loop.

Along with suggesting new opportunities for research, examining sustainable consumption within the SCT framework also suggests potential new policy interventions. Public policy has often focused on changing consumer values or beliefs as a mechanism to directly change behavior. In this manuscript, the focus is on describing the interdependency of personal, environmental and behavioral factors, which opens up the possibility for new interventions, some of which may be inherently less direct than current approaches. For example, toy library use suggests that proactively encouraging consumers to evaluate the various benefits of their sustainable consumption behaviors might help reinforce perceived benefits and encourage appreciation of unanticipated benefits. Future public policy promotion could encourage sustainable consumer behaviors by explicitly contrasting them with the actual experience of less sustainable, traditional consumption behaviors, as the toy library example suggests. Finally, policymakers could create opportunities for consumers to try or sample sustainable behaviors through providing or supporting community sharing, swapping, or product repair and maintenance events.

6. Conclusion

The primary objective of this article has been to propose a new perspective and approach to research on sustainable consumption in an effort to more successfully address what is inherently a highly complex topic. The call for additional research in this area is not new. Indeed, several recent publications in leading marketing journals also highlight the importance of the topic of sustainability in general and also provide suggestions for ways to reframe the problem as well as avenues for future research (Kotler, 2011; Sheth, Sethia, & Srinivas, 2011). What is new in this article is the depiction of the interdependency of the three general factors – personal, environmental and behavioral – using an established theoretical framework, Bandura's social cognitive theory. The authors concur in general with Sheth et al. (2011) who argue that the "nature of (the) relationship between a caring mindset and temperate consumption behavior … needs to be investigated" (p. 34), but the question remains as how to think about the relationship between behavior and the wide variety of personal factors related to behavior. Further, simultaneously addressing environmental (e.g., physical and sociocultural), personal, and behavioral factors is critical.

As discussed in this article, thinking about these issues through the lens of SCT encourages a more integrated and dynamic perspective of the relationships between and within each factor. For marketing research, and consumer behavior researchers in particular, what is likely most novel about this perspective is that instead of focusing on the factors that influence and predict behavior, reciprocal determinism invites consideration of how changes in behaviors can instead influence both personal and environmental factors. Further, SCT invites the literature to consider how these factors interrelate over time such that, for example, a change in behavior can lead to unanticipated positive outcomes – as illustrated earlier in the two examples – which, in turn, can influence personal motivations, which can themselves further reinforce behaviors and ultimately influence the environment (i.e., the culture and institutions that individual consumers are embedded within). Thus, rather than offer a contrary view, what this article proposes is a logical next step in how researchers conceive of sustainable consumption and how researchers define the problems that they address.

While this article offers a social cognitive framework as a valuable way to think about inherently complex problems such as sustainable consumption, some significant challenges are ahead for researchers. Some of the biggest challenges, ironically, have as much to do with

the nature of marketing as an academic institution and the field's mindset as they do with the specific topic of sustainable consumption. For example, Lehmann, McAlister, and Staelin (2011) note that current trends within marketing academia – that tend to emphasize the theoretical and/or methodological rigor of research at the expense of other desirable characteristics, such as relevance – are leading to marketing as an academic discipline becoming marginalized. Worse than this marginalization, the big issues that need addressing are not yet receiving the attention and resources they need. In an effort to address the gap within the current context of research on sustainable consumption, this article suggests the following approach: 1) begin with the problem, not the theory, 2) treat behavior as an independent variable, not just as an outcome, and 3) address multiple domains and levels simultaneously. Broadly speaking, these ideas have already been articulated and promoted by leading marketing scholars to varying degrees. The TCR movement (Mick, 2006) within the consumer research community has been actively supportive of research that addresses issues related to consumer welfare, including sustainability, and Lehmann et al. (2011) also strongly support the idea of starting new research by first identifying a meaningful problem to solve.

The casual reader might assume, then, that this article advocates an approach that favors relevance over rigor. The authors do not, however, support this approach. Nor do the many others who are promoting the idea of beginning with a meaningful problem. Consistent with one of the six core commitments of TCR (Mick, Pettigrew, Pechmann, & Ozanne, 2012), this article suggests that "strong theory and methods should be neither depreciated nor traded-off…" (p. 7). Without sufficient methodological rigor, research findings will lack credibility, and without sufficient theoretical development, the same findings will be difficult to apply and build upon. Indeed, an overall objective of the current article has been to argue that with the perspective gained from reconsidering Bandura's SCT framework, researchers can both address complex problems more completely as well as build on existing theories in ways that have the potential to encourage a broader application and dissemination of collective research. Further, as Lehmann et al. (2011) and others point out, another good reason to begin with the problem is that doing so – rather than relying on theory as a starting point – has great potential for developing entirely new theories and perspectives.

On the other hand, one must not lose sight of the primary reason for developing new theories and perspectives. Indeed, the first core commitment of TCR is to improve consumer well-being (Mick et al., 2012) and that objective has been the primary inspiration for this article. To that end, Bandura's SCT framework provides a novel perspective for researchers to address a wide variety of complex, consumer well-being related issues including, but not limited to, those issues related to sustainable consumption.

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