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The role of ambivalence in sustainable consumption:

Literature review and research agenda

Jenni Sipilä

INTRODUCTION

Our individual decisions as consumers have an unprecedented effect on our environment – for better or for worse. While on the one hand overconsumption is an important driver of the global sustainability crisis (Institute for European Environmental Policy, 2019), on the other hand consumers also have the power to demand sustainable products and boycott companies that do not operate in a sustainable way (Devinney et al., 2006). To underline the large power of consumers, it may even be “better to shop than to vote” (Hertz, 2001, p. 190). Indeed, there is an urgent need to adopt more sustainable consumption patterns to reduce the use of natural resources and cut the global CO₂ emissions (UNEP, 2009). Therefore, this chapter focuses on individual consumers, that is, the “micro-level” agents in sustainability transitions who can drive sustainability via their consumption behavior (Caruana & Chatzidakis, 2014).

Consumer awareness and perceived importance of sustainability issues has increased (Huang & Rust 2011), with 54% of consumers surveyed across 25 countries (including for example the USA, China, India, Russia, and Germany) saying that a sustainable lifestyle is a priority for them (GlobeScan, 2019). Yet, in many cases a gap exists between consumers’ attitudes towards sustainability and their actual consumption behavior (Devinney et al., 2006). In this chapter, this gap is approached through the concept of ambivalence, which refers to having both positive and negative evaluations of the same object (Priester & Petty, 1996), such as sustainable products, companies, or practices. Ambivalence is prominent in our lives (Fazio, 2007), and the context of sustainable consumption is not an exception. For example, consumers may believe that eating meat is pleasurable but at the same time associated with moral, ecological, or health-related problems (Buttlar & Walther, 2018), or they might perceive that recycling is beneficial for nature but also effortful and annoying (Castro et al., 2009). However, while ambivalence is a relevant concept in the area of sustainable consumption, the literature review conducted for this chapter reveals that there are important gaps to be addressed to reach a more comprehensive understanding of its role in this context.

Against this background, the goal of this chapter is to understand consumers' ambivalence towards sustainable consumption. Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 41).

Applied into the context of consumption, sustainable consumption is consequently defined as "actions that result in decreases in adverse environmental impacts as well as decreased utilization of natural resources across the lifecycle of the product, behavior, or service" (White et al., 2019, p. 24).

This chapter proceeds with a systematic literature review to produce a synthesis of state-of-the-art research on consumer ambivalence in the domain of sustainable consumption.

Subsequently, a contribution is made to research on sustainable consumption by synthesizing the literature into an ambivalence framework, identifying research gaps, and developing an agenda to guide future research around this topic.

THE ROLE OF AMBIVALENCE IN SUSTAINABLE CONSUMPTION

Method: Systematic Literature Review

A literature review was conducted to synthesize existing research on the role of ambivalence in the context of sustainable consumption. The literature search was conducted in August 2020 from the Scopus database with the following search terms adapted from White et al. (2019): *sustainab** or *green* or *ecolog** or *environment** or *eco-friendly* and *consum** or *behavi** or *choice* or *usage* or *adopt** or *dispos** or *recycl**, and additionally *ambivale**, which were looked for in the abstract, title, or key words of the article. This search returned 754 articles. The title and abstract of each article were examined to determine whether the article enabled reaching the goal of the literature review, i.e., forming an understanding of ambivalence in the domain of sustainable consumption. Thus, articles focusing on other types of consumer behaviors such as smoking, or representing entirely different fields of research, such as medical sciences, accounting, or engineering, were excluded. This process resulted in the inclusion of 18 articles for further review. This body of articles was extended with a Google Scholar search, resulting in an additional six articles. Thus, 24 articles were reviewed and form the basis of this chapter. A more detailed description of the reviewed literature is presented in Table 7.1. Furthermore, the literature review is summarized in Table 7.2, which will serve as an organizing tool for the following sections in which the reviewed literature is discussed and synthesized.

Table 7.1 Summary of the reviewed literature

Sample characteristic	Description
Amount of searched literature	754 articles in the Scopus database and a supplementary review of literature on Google Scholar
Amount of reviewed literature	24 articles
Publication years	2001–2020
Journals (number of articles from each journal in brackets)	Appetite (4), British Food Journal (2), Environment and Behavior (1), European Journal of Marketing (1), Food Security (1), Food Quality and Preference (4), Journal of Advertising (1), Journal of Brand Management (1), Journal of Cleaner Production (2), Journal of Consumer Culture (1), Journal of Consumer Psychology (1), Journal of Environmental Psychology (3), Sustainability (1), Transactions of the Institute of British Geographers (1)
Disciplines	Consumer behavior, psychology, environmental psychology, sociology
Methods	Qualitative interviews, surveys, longitudinal survey, experiments, multiple methods

Table 7.2 Summary of the literature review

Source	Type of behavior	Method	Conceptual background	Positive reactions	Negative reactions	Type of conflict	Boundary conditions	Coping mechanisms
Anderson 2012	Working in an environmentally friendly organization	Qualitative interviews	Literature on citizenship and ideologies of consumption	Feeling of environmental security for oneself and the planet	Foregoing a higher salary in a more traditional company, perceived pressure to forego benefits of a consumerist lifestyle such as flying off to holidays	Conflict between environmental and consumerist values	n.a.	Separating one's professional, environmentally committed identity strictly from one's personal identity, or aligning those identities
Barnes, Lucas, & Maio (2016)	Acceptance of messages on global food security topics	Survey	Literature on attitudinal ambivalence	n.a.	n.a.	Objective ambivalence based on conflict within personal values and subjective ambivalence	n.a.	n.a.
Berndsen & van der Pligt (2004)	Reducing meat consumption	Survey	Theory of Reasoned Action/Theory of Planned Behavior, attitudinal ambivalence literature	Positive beliefs about eating meat, not perceiving serious moral problems or risks with eating meat	Negative feelings about eating meat, perceiving morally unacceptable issues and risks for both health and the environment from eating meat	Subjective ambivalence	n.a.	n.a.
Burke, Eckert, & Davis (2014)	Purchasing ethical products	In-depth interviews and survey	Literature on reason-based choices, perceived consumer effectiveness, Value-Belief-Norm theory, Social Identity theory, and Self-Determination theory	Perceiving ethical consumption as effective and relevant, perceiving personal benefits from sustainable consumption	Confusion and skepticism towards ethical consumption, perceived lower quality and higher price of sustainable products	Objective ambivalence	Consumers identified as ambivalent were more likely to be female, hold a graduate degree and support the Labor or Green parties	n.a.
Buttlar & Walther (2018)	Reducing meat consumption	Experiment	Literature on attitudinal ambivalence and moral disengagement	Positive beliefs about meat: sensory pleasure and tradition	Negative beliefs about meat; moral, ecological, and health-related issues	Ambivalence, measured from mouse movement trajectories	Omnivores show higher levels of ambivalence towards eating meat and more rationalizations of meat consumption than non-omnivores	Moral disengagement, denial of harm, avoiding responsibility

Castro, Garrido, Reis, & Menezes (2009)	Recycling	Two focus groups and a survey	Theory of Reasoned Action/Theory of Planned Behavior, Cultural Theory, Representations Theory, attitudinal ambivalence literature	Perceptions that recycling helps to preserve nature, protect future generations and health, avoid wasted material, and that the material can be useful to other people and has value in itself	Lack of patience to recycle, perceived discomfort, annoyance, and lack of personal benefit from recycling, perceptions that recycling requires establishing new habits, is expensive, and lacks usefulness	Subjective ambivalence	n.a.	n.a.
Chang (2011)	Purchasing green products	Survey and experiment	Literature on attitudinal ambivalence, perceived consumer effectiveness, skepticism, cognitive dissonance, and persuasion	Perceived green product utility Positive beliefs about shutting down polluting industries, reducing waste, and stricter anti-pollution laws; positive feelings about avoiding to buy polluting products, recycling, and reducing heating	Perceived higher price and lower quality of green products, skepticism Negative beliefs about shutting down polluting industries, reducing waste, and stricter anti-pollution laws; negative feelings about recycling, reducing heating, and avoiding to buy polluting products Negative beliefs about meat: animal unfriendly, fattening, environmentally unfriendly; negative feelings about meat: guilt, shame, feeling uncomfortable	Subjective ambivalence	n.a.	Motivated processing to discount the believability of a green ad
Costarelli & Colloca (2004)	Intention to behave in an environmentally friendly way	Survey	Literature on attitudinal ambivalence			Objective and subjective ambivalence	n.a.	n.a.
de Jonge, van der Lans, & van Trijp (2015)	Reducing meat consumption, choosing more animal friendly options Handling risks in food consumption, such as pesticides in vegetables, growth hormones in meat, or genetically modified food	Choice experiment	Literature on consumer decision-making and attitudinal ambivalence	Positive beliefs about meat: Tasty, cheap, nutritious; positive feelings about meat: happiness, satisfaction		Objective ambivalence	n.a.	n.a.
Halkier (2001)		Focus group interviews and analysis of public texts	Sociology of consumption	n.a.	n.a.	Ambivalence as a tension between the bodily practices of control and desire	n.a.	Normalizing or legitimizing ambivalence, developing new routines to avoid ambivalence
Honkanen & Olsen (2009)	Taking animal and environmental welfare into account in food consumption	Survey	Literature on attitudinal ambivalence	n.a.	n.a.	Subjective ambivalence	Consumers identified as ambivalent were mostly female, had a low level of education, belonged to the middle class, and valued food naturalness and health	n.a.

Kapferer & Michhaut-Denizeau (2014)	Considering sustainability as a part of luxury consumption	Survey	Balance Theory, Congruence Theory	n.a.	n.a.	Considering luxury and sustainability as contradictory concepts Ambivalence, defined as being “undecided”, “indifferent”, “tolerant” or having “conditional acceptance” of wind energy.	Consumers’ income, engagement in sustainable behavior, love of luxury, and perceptions that luxury is based on superficial values and creates social unrest Consumers identified as ambivalent had higher fear of harmful infrasound, higher incomes and lived in cities with less inhabitants than those with more favorable attitudes towards wind energy	n.a.
Langer, Decker, Roosen, & Menrad (2018)	Acceptance of wind energy	Survey	Literature on the acceptance of wind energy	n.a.	Fear of harmful infrasound from wind turbines, distrust in politicians Perceived inconvenience of shopping at small local stores, feeling guilty of shopping at larger retailers	Value conflict resulting from the coexisting roles of consumer and citizen		n.a.
Lee, Kim, & Rha (2017)	Acceptance of government regulation of large retailers and shopping at smaller local stores	Q methodology Semi-structured interviews, observations, and a questionnaire	Literature on socially responsible consumption and value conflicts	Positive attitude towards shopping at small local stores instead of larger retailers				n.a.
Lepoša (2017)	Acts, choices and perceptions of sustainable leisure boating		Consumer Value theory, motivation–opportunity–Ability theory	n.a.	Perceived negative environmental impact of boating	Role conflict (role of consumers vs. environmental citizens) produces ambivalence		Omission, denial, and acceptance of the negative environmental effects of one’s behavior
Lorenz, Langen, Hartmann, & Klink-Lehmann (2018)	Leaving food leftovers (real behavioral data)	Observations and survey	Theory of Reasoned Action/Theory of Planned Behavior, literature on attitudinal ambivalence	Beliefs that leaving leftover food is good for one’s shape and health, makes one feel less tired and stuffed after the meal	Beliefs that leaving leftover food causes pollution and food waste, increases climate change, and is a waste of money Worry about environmental problems, perceiving recycling as meaningless, unimportant, unpleasant, a waste of time, inconvenient, and disgusting	Objective ambivalence (discussed but not included in the model)		n.a.
Ojala (2008)	Recycling	Survey and semi-structured interviews	Literature on sociological ambivalence, attitudinal ambivalence, and mixed emotions	Emotions of hope and joy, perceiving recycling as meaningful, important, pleasant, and worth the time it takes		Objective ambivalence and mixed emotions		Activating positive emotions related to recycling, characterizing oneself as a lazy person

Onwezen & van der Weele (2016)	Reducing meat consumption	Two surveys	Theory of cognitive dissonance	Concern for health or animal wellbeing as a motivator to reduce meat consumption	Love of meat as a barrier to reducing meat consumption	Conflicting experiences regarding meat consumption	Individuals identified as strategically ignoring placed low importance on sustainability	Strategically ignoring information that could cause feelings of conflict
Onwezen, Reinders, & Sijtsema (2017)	Intention to buy bio-based products	Two surveys	Theory of Planned Behavior, literature on attitudinal ambivalence	n.a.	n.a.	Feeling of subjective ambivalence	n.a.	n.a.
Onwezen, van der Puttelaar, Verain, & Veldkamp (2019)	Intention to consume insects instead of meat	Two surveys and one experiment	Theory of Planned Behavior, literature on the role of affect in consumer decision-making	Positive emotions: happy, satisfied, proud	Negative emotions: angry, sad, guilty, disgusted	Subjective ambivalence	n.a.	n.a.
Povey, Wellens, & Conner (2001)	Intention to follow vegetarian and vegan diets	Survey	Theory of Planned Behavior, literature on attitudinal ambivalence and identity	Positive beliefs towards vegetarian and vegan diets: healthy, humane, ethical, tasty, cheap, environmentally friendly	Negative beliefs towards vegetarian and vegan diets: expensive, nutritionally unbalanced, boring, restrictive, extreme, difficult to maintain	Objective ambivalence A conflict between attitudes towards replacement and towards retention, leading to subjective ambivalence	People show the most positive attitude towards the diet that they are currently following and higher ambivalence towards diets close to their own	n.a.
Roster & Richins (2009)	Product replacement	Longitudinal survey	Theory of Planned Behavior, literature on attitudinal ambivalence	n.a.	n.a.	Objective ambivalence	Importance of the product replacement decision, strength of emotional response to replacement Female participants showed more ambivalence towards meat than male participants, and Brazilian participants showed more ambivalence than French, Argentinian, or US participants	n.a.
Ruby, Alvarenga, Rozin, Kirby, Richer, & Rutzstein (2016)	Meat consumption	Survey	Literature on attitudes and attitudinal ambivalence	High nutritional density, preferred taste, and high status related to meat consumption	Concerns about weight, degenerative diseases, the ethics of killing animals, and the environmental cost of meat production	Objective ambivalence		n.a.
Videbæk & Grunert (2020)	Intention to eat insects instead of meat	Survey	Literature on information processing, disgust, and attitudinal ambivalence	Interest towards eating insects	Disgust towards eating insects	Objective ambivalence	n.a.	n.a.

Conceptual Basis for Understanding the Role of Ambivalence in Sustainable Consumption

Table 7.2 shows that the reviewed literature mostly builds on psychological research on attitudinal ambivalence (Kaplan, 1972; Priester & Petty, 1996; Thompson & Zanna, 1995) to understand how consumers evaluate and make decisions about sustainable behaviors. For example, the concept of attitudinal ambivalence is applied to understanding consumer acceptance of sustainability information (Barnes et al., 2016), meat consumption (Berndsen & van der Pligt, 2004), or general intentions to behave in a sustainable way (Costarelli & Colloca, 2004). Furthermore, some of the reviewed articles apply cognitive dissonance theory (Festinger, 1962), which was originally developed to explain psychological conflicts taking place after a person has committed to a choice or a course of action, which is in conflict with one's attitude (van Harreveld et al., 2009). For example, cognitive dissonance theory is helpful in explaining how people cope with conflicts resulting from meat consumption, which on the one hand is perceived as enjoyable but on the other hand causes suffering to animals (Onwezen et al., 2016).

The predominant theoretical basis for understanding ambivalence in the context of sustainable behavior is the Theory of Reasoned Action (TRA) and especially its extended version, Theory of Planned Behavior (TPB). According to TPB, behavioral intentions can be predicted from a person's attitude towards the behavior (i.e., the degree to which a person has a favorable or unfavorable evaluation of the behavior), subjective norms (i.e., the perceived social pressure to perform or not to perform the behavior), and perceived behavioral control, (i.e., the perceived ease or difficulty of performing the behavior; Ajzen, 1991). Intentions, in turn, are a predictor of real behavior, together with perceived behavioral control (Ajzen, 1991). The studies reviewed for this chapter particularly focus on extending TPB with attitudinal ambivalence to explain behavioral intentions (Berndsen & van der Pligt, 2004; Onwezen et al., 2017; Roster & Richins, 2009), self-reported behaviors (Castro et al., 2009), the attitude-intention relationship (Povey et al., 2001), or the intention-behavior relationship (Roster & Richins, 2009).

Beyond the focus on individual psychological processes, ambivalence can also be approached from a broader perspective rooted in the sociological literature (Anderson, 2012; Halkier, 2001; Lepoša, 2017). From this perspective, ambivalence refers to incompatible normative expectations directed towards a societal status (Merton & Barber, 1976). While the psychological perspective is more common, the sociological approach is nevertheless highly relevant because psychological ambivalence does not exist in a vacuum but rather in the

broader social and cultural contexts to which individual consumers belong (Hillcoat-Nallétamby & Phillips, 2011). Furthermore, sociological ambivalence might subsequently lead to psychological ambivalence on an individual level (Merton & Barber, 1976; Sipilä et al., 2018).

The Origins of Ambivalence towards Sustainable Consumption

The reviewed literature shows that ambivalence consists of various positive and negative reactions to sustainable consumption (Table 7.2). On the positive side, sustainable consumption is associated with feelings such as hope and joy (Ojala, 2008), as well as positive feelings in general (Costarelli & Colloca, 2004). Furthermore, consumers can be interested in (Videbæk & Grunert, 2020) and perceive various benefits of sustainable consumption, which can be categorized into self- and other-benefits (Green & Peloza, 2014). Self-benefits entail, for instance, health benefits (Onwezen & van der Weele, 2016), a feeling of environmental security (Anderson, 2012) or, in some cases, cost savings resulting from sustainable consumption (Povey et al., 2001). Other-benefits refer to, for example, preserving the environment (Anderson, 2012; Castro et al., 2009; Ojala, 2008), protecting future generations and others' health (Castro et al., 2009), or contributing to animal wellbeing (Onwezen & van der Weele, 2016) through sustainable consumption.

On the negative side, consumers may in some cases believe that sustainable products are more expensive than conventional alternatives (Chang, 2011; Gleim et al., 2013; Povey et al., 2001), while also having a lower quality (Chang, 2011; Povey et al., 2001). Additionally, consumers may have strongly established habits (Ojala, 2008) or even a feeling of love (Onwezen & van der Weele, 2016) towards unsustainable consumption objects or behaviors, and more sustainable consumption patterns can be perceived as uncomfortable, annoying (Castro et al., 2009), inconvenient (Lee et al., 2017), boring, restrictive, difficult to maintain, or even extreme (Povey et al., 2001), without providing much personal benefit (Castro et al., 2009). Additionally, unsustainable behaviors can be perceived to have important self-benefits. For example, consumers may believe that leaving leftover food helps them feel less stuffed and tired after a meal (Lorenz et al., 2018). Thus, consumers may show negative feelings (Costarelli & Colloca, 2004) and in some cases even strong negative emotions towards sustainable consumption. For example, replacing meat consumption with insects may arouse a feeling of disgust (Videbæk & Grunert, 2020), or wind energy facilities may arouse fear of harmful infrasound (Langer et al., 2018). Furthermore, consumers can perceive a lack of information and a low perceived self-efficacy regarding the topic of sustainable consumption

(Ojala, 2008), and be confused and skeptical about the topic of sustainable consumption (Burke et al., 2014).

Different Types of Ambivalence towards Sustainable Consumption

Ambivalence occurs when the positive and negative reactions to sustainable consumption discussed above coexist. The concept of ambivalence can be categorized into subjective and objective types (Priester & Petty, 1996). Subjective ambivalence refers to the uncomfortable subjective feeling of mixed reactions and confusion, whereas objective ambivalence refers to the coexistence of positive and negative evaluations (Priester & Petty, 1996), which can also be implicit (van Harreveld et al., 2009). In the sustainable consumption setting, most emphasis has been placed on subjective ambivalence (Berndsen & van der Pligt, 2004; Castro et al., 2009; Chang 2011; Honkanen & Olsen, 2009; Onwezen et al., 2017; Onwezen et al., 2019; Roster & Richins, 2009), which also has a more direct influence on behavior than objective ambivalence because it is an uncomfortable psychological state (van Harreveld et al., 2009). Those articles focusing on objective ambivalence have calculated it from the combination of positive and negative beliefs (Povey et al., 2001; Ruby et al., 2016), and/or emotions (de Jonge et al., 2015; Ojala, 2008; Videbæk & Grunert, 2020) related to sustainable consumption. Furthermore, some of the studies have measured both objective and subjective ambivalence (Barnes et al., 2016; Costarelli & Colloca, 2004).

In addition to individual-level ambivalence, and in line with the sociological approach to ambivalence, consumers may perceive conflicts related to their role in society. For example, the role of consumer implies consuming goods, while the role of an environmental citizen implies reducing consumption (Lepoša, 2017). The conflicting normative expectations that are related to these roles may also be reflected in the form of value conflicts (Lee et al., 2017). For example, consumers may perceive conflicts between environmental values, which encourage sustainable behavior, and consumerist values, which encourage unsustainable behavior (Anderson, 2012).

Overcoming Ambivalence: Coping Mechanisms and Behavioral Outcomes

Ambivalence becomes uncomfortable when both positive and negative reactions are mentally accessible at the same time, such as when a choice has to be made (van Harreveld et al., 2009). Due to the uncomfortable feeling, individuals are motivated to cope with ambivalence using various coping mechanisms (van Harreveld et al., 2009). For example, in a study of consumers' reactions to green advertising, when an advertisement claimed that a company

had invested high effort in green production, ambivalent consumers felt higher levels of discomfort, and consequently engaged in motivated processing in which they discounted the believability of the advertisement, as well as that of the green claims (Chang, 2011). This subsequently led to a more negative attitude towards the green product (Chang, 2011).

In addition to motivated processing, consumers may strategically ignore information that will lead to an experience of conflict (Onwezen & van der Weele, 2016), morally disengage from the consequences of their behavior, or deny causing any harm via unsustainable choices (Buttlar & Walther, 2018). One way of moral disengagement is to characterize oneself as an inherently lazy person, in which case it is only logical that one does not engage in effortful sustainable behaviors such as recycling (Ojala, 2008). In addition to coping mechanisms based on information processing, coping mechanisms can also be based on emotions. For example, consumers can focus their attention on the positive emotions arising from sustainable consumption (Ojala, 2008). Furthermore, people may try to separate their identity as an environmentally committed person from their consumer identity or align those identities (Anderson, 2012), or normalize the existence of ambivalence (Halkier, 2001).

Depending on the coping mechanisms, ambivalence can subsequently have varying behavioral consequences. On the one hand, consumers may cope with ambivalence by “tipping the balance” of ambivalence towards a positive attitude, which in turn increases behavioral likelihood (Hartmann & Apaolaza-Ibáñez, 2012). On the other hand, the attitude can tip towards negativity, which decreases behavioral likelihood (Locke & Braun, 2009), and therefore can be expected to lead to decreased sustainable consumption. In the reviewed literature, the behavioral outcomes range from the reduction of unsustainable behaviors such as meat consumption (Berndsen & van der Pligt, 2004; de Jonge et al., 2015; Onwezen & van der Weele, 2016; Onwezen et al., 2019; Ruby et al., 2016) to consuming more environmentally friendly products (Burke et al., 2014; Onwezen et al., 2017; Povey et al., 2001; Videbæk & Grunert, 2020) and subsequently disposing of the products in a sustainable way (Castro et al., 2009; Ojala, 2008).

Boundary Conditions: Individual and Situational Differences

There are individual differences in how much ambivalence consumers exhibit towards sustainable consumption. For example, consumers show high ambivalence towards diets close to their own, such that vegetarians and meat avoiders show a high level of ambivalence towards a vegan diet (Povey et al., 2001). Besides diet, demographic factors have an influence on the level of ambivalence towards sustainable consumption. Consumers high in

ambivalence tend to be female in many of the reviewed studies (Burke et al., 2014; Honkanen & Olsen, 2009; Ruby et al., 2016), and level of education (Burke et al., 2014; Honkanen & Olsen, 2009), political orientation (Burke et al., 2014), social class (Honkanen & Olsen, 2009), income (Langer et al., 2018), and nationality (Ruby et al., 2016) are also related to the amount of ambivalence that consumers exhibit. Additionally, situational factors may play a role. For example, in the case of decisions about whether to replace an old possession with a new one, ambivalence is high when the replacement decision is important but friends and family are not supportive of the replacement, or when the decision is unimportant but there is pressure from family and friends to make a replacement (Roster & Richins, 2009).

Furthermore, there may be some individual differences in coping with ambivalence. For example, omnivores have a higher need to rationalize meat consumption than consumers following less meat-based diets (Buttlar & Walther, 2018), and individuals who place lower importance on sustainability tend to strategically ignore sustainability information (Onwezen & van der Weele, 2016). However, the literature review reveals that potential moderating factors remain relatively less understood, and therefore constitute an important research gap discussed in the next section.

RESEARCH GAPS AND FUTURE RESEARCH AGENDA

The reviewed literature reveals that ambivalence plays an important role in the context of sustainable consumption. The literature was therefore synthesized in the form of an ambivalence framework, which is also used to demonstrate research gaps (Figure 7.1). The research gaps are categorized into conceptual, contextual, and methodological gaps. The gaps and related avenues for future research will be discussed in this section.

Figure 7.1 Theoretical framework and the identified research gaps

3.1 Conceptual Research Gaps

Broader variety of coping mechanisms

While the reviewed literature has examined consumers' use of various coping mechanisms in the face of ambivalence related to sustainable consumption, some coping mechanisms remain less studied in this context. The psychological literature has categorized coping mechanisms into emotion-focused and problem-focused types. Emotion-focused coping mechanisms are aimed at reducing the uncomfortable feeling of ambivalence and include procrastination and decision avoidance (van Harreveld et al. 2009). This may have important consequences in the context of sustainable consumption, particularly as it may imply that consumers end up consuming less because they avoid making consumption decisions. For example, "if someone experiences considerable difficulty in choosing between a very cool gasoline-slurping car or a very uncool hybrid car, that someone will likely postpone making a decision" (van Harreveld et al. 2009, p. 51). Such a proposition remains to be empirically studied in the field of sustainable consumption.

Problem-focused coping strategies come to play when a decision cannot be avoided and include more effortful strategies such as systematic information processing and less effortful

strategies such as heuristics and biased processing (van Harreveld et al., 2009). The latter involves, for example, conforming to the majority or someone that the person perceives as an expert on a given the topic (van Harreveld et al., 2009). This reveals an interesting research gap relating to social influence, which has not been addressed in the reviewed body of literature. Recent studies reveal that not only personal contacts, but also social media opinion leaders have a high amount of power to shape consumer behavior (Casaló et al., 2020) and in many cases advocate sustainability issues, such as plastic-free packaging (Klesper, 2019). Given the omnipresence of social media in today's consumption contexts (Casaló et al., 2020), future studies could therefore investigate the extent to which social media opinion leaders may be perceived as credible experts on sustainability topics, and whether consumers might turn to their opinion in an effort to cope with ambivalence towards sustainable consumption.

Additional boundary conditions

The literature review revealed that the use of different coping mechanisms depends on various moderating factors. However, relatively few factors have been studied so far in the context of sustainable consumption. For example, whether individuals use more or less effortful coping strategies depends on their motivation to make an accurate decision, as well as their ability to use effort, which can be decreased if conscious thought is needed for another task, or in the case of time pressure (van Harreveld et al., 2009). Thus, the implications of a stressful lifestyle on coping with the ambivalence related to sustainable consumption, as well as the subsequent behavioral consequences, might be an interesting area for future research. Furthermore, there may be other situational factors which influence the use of coping mechanisms. For example, strategically ignoring information to cope with ambivalence might be particularly convenient under social pressure or under conditions of unclarity, such as in the face of contradictory information on a sustainability issue (Onwezen & van der Weele, 2016).

Additionally, consumers have different perceptions of how much they can “make a difference” with their consumption decisions, or perceived consumer effectiveness (PCE; Ellen et al., 1991). PCE is a key construct through which agency has been approached in the domain of sustainable consumption (Antonetti & Maklan, 2014) and a large number of studies have identified PCE as an important driver of sustainable behavior (Antil, 1984; Kinnear et al., 1974; Obermiller, 1995; Seligman et al., 1979; Webster, 1975). It could be the case that consumers with low PCE are inclined to cope with ambivalence by denying their personal

responsibility for the sustainability of their decisions, as they do not perceive themselves as highly capable of “making a difference” when it comes to sustainability, regardless of their consumption choices. This proposition remains to be studied in future research.

3.2 *Research Gaps Pertaining to Research Contexts*

While the reviewed articles have studied sustainable consumption in various contexts, the focus in this body of literature remains on “offline” environments, and a consideration of sustainable consumption in digital settings remains scarce. This is problematic because digitalization has radically shaped consumption environments (Schmitt, 2017), and has the potential to serve as a catalyst for sustainability (Aksin-Sivrikaya & Bhattacharya, 2017). For example, via digital platforms, the sharing economy has enabled consumers to share rides instead of driving their own car (e.g., Uber and Lyft) or purchase leftover food from restaurants (e.g., ResQ Club). Such digital solutions may elicit new forms of ambivalent reactions, such as a potential lack of trust towards the service provider (Ter Huurne et al., 2017) coupled with positive experiences (Hawlitschek et al., 2016). For example, in the case of purchasing leftover food via an app, a consumer might have some uncertainty about freshness or food safety, while also being happy about the possibility of reducing waste or saving money. The reviewed literature has not taken such ambivalent reactions into account in digital environments, and future research is warranted in this area to develop an improved understanding of the potential of digital technologies for driving sustainable consumer behavior.

3.3 *Methodological Research Gaps*

Exploring new technologies for data collection

The reviewed literature has mostly focused on non-physiological data collection methods such as questionnaires and interviews, with the notable exception of Buttlar & Walther (2018), who used mouse movement trajectories to measure ambivalence. Thus, the use of state-of-the-art data collection methods, such as eye tracking, brain imaging, and physiological stress measurement, has not been extensively considered in the reviewed literature. This is an important methodological research gap, because these methods have strong potential to unveil unconscious, yet powerful drivers of consumption behavior. Furthermore, they can help to overcome the problem of social desirability bias, which is ever-present in the field of sustainable consumption while using self-reported measures (Andorfer & Liebe, 2012).

Beyond the reviewed literature, studies in the field of psychology have identified ambivalence from various physiological measurements. Using functional magnetic resonance imaging, Cunningham et al. (2003) found that making judgments under ambivalence causes higher ventrolateral prefrontal cortex activity, indicative of systematic information processing. Further indicators of ambivalence include side-to-side movements on a balance board (Schneider et al., 2013). Beyond these approaches, one fruitful area for future research might be identifying coping mechanisms with eye tracking measurements. For instance, if consumers cope with sustainability-related ambivalence by avoiding sustainability information, this should be visible in their eye movements (Huang, 2018). Thus, a person with a meat-based diet might avoid looking at information on the damaging effects of meat consumption on the environment or the animals. Such applications are feasible with the current widespread accessibility of reliable psychophysiological measurement technologies and show strong potential for advancing research on sustainable consumption.

Real behavioral outcomes

The reviewed literature has mainly measured self-reported behaviors or intentions as a focal outcome. However, particularly in the context of sustainable consumption, in which social desirability can pose a threat on the validity of self-reported measures (Andorfer & Liebe, 2012), measuring behavioral outcomes would enable a more externally valid and generalizable understanding of the role of ambivalence. Field experiments and observational studies would be excellent data collection methods in this regard. One example of such a design is to observe the amount of leftover food of people leaving a restaurant and ask the same individuals to participate in a questionnaire to understand the reasons for not finishing their meal (Lorenz et al., 2018). Ambivalence in the context of other sustainable behaviors, such as recycling, choosing vegetarian food options, or purchasing sustainable product alternatives could be studied using similar approaches. For example, consumers' recycling at cafeterias could be observed, followed by a questionnaire to measure their ambivalence. Alternatively, experimental designs could be developed to manipulate ambivalence, followed by an observational measure of the influence of ambivalence on real behavior.

Longitudinal research designs

The reviewed literature has not taken advantage of longitudinal research designs, with the notable exception of Roster & Richins (2009). However, behavior change towards a more sustainable way of consuming is a process which occurs over time. Studies from the field of habit change have found that establishing a new habit (such as a more sustainable way of

consumption) occurs gradually over repeated experiences (Wood & Neal, 2009). The process of behavior change towards more sustainable consumption might be particularly challenging in the face of ambivalence, as consumers continuously need to overcome their ambivalent attitudes while making subsequent decisions with sustainability implications. For example, while consumers may be able to make a sustainable choice (such as taking the train instead of driving to work) one day, continuing this behavior during the following day may be more challenging especially if the behavior is not yet established as a habit and the consumer is under time pressure. Therefore, longitudinal research designs can provide important insights into sustainable consumption by enabling the investigation of behavior change processes over time.

CONCLUSION

In an attempt to understand consumers' complex reactions to sustainability issues, this chapter has taken stock of the literature on ambivalence in the context of sustainable consumption. Based on a literature review, it was concluded that consumers have various positive and negative reactions to sustainable consumption, and in many cases these reactions coexist, resulting in ambivalence. Through systematic measurement of ambivalence and an understanding of how consumers resolve ambivalence (i.e., coping mechanisms), it becomes possible to explain and predict when the topic of sustainable consumption raises ambivalence, and how ambivalence ultimately influences consumer behavior. Ambivalence may thus serve as a bridge between consumers' complex reactions to the topic of sustainability and their behavioral responses, therefore enabling an improved understanding of sustainable consumption.

However, there are also important gaps in this stream of literature. The various ways in which consumers may cope with ambivalence towards sustainability, as well as individual and situational differences that might influence the use of coping mechanisms formulate important theoretical research gaps. Furthermore, future researchers may benefit from the use of cutting-edge research methods such as eye tracking and brain imaging, increase the external validity of their results with real behavioral data, and improve the understanding of behavior change processes leading to more sustainable consumption via longitudinal research designs. Finally, the research would benefit from an increased understanding of sustainable consumption in digital environments.

Addressing these research gaps would not only advance theoretical development but could also provide important practical implications. Through an understanding of how different

consumers cope with ambivalence, it would be possible to predict consumer behavior with improved accuracy and tip the balance of an ambivalent attitude towards a more favorable one in terms of sustainability. For instance, understanding how consumers cope with ambivalence at different points of their behavior change process towards a more sustainable lifestyle would help companies to better target their communications at consumers who are in the beginning of their sustainability journey versus those who need support in maintaining sustainable behaviors. Furthermore, future studies may find that, to encourage reduced consumption, it could be useful to elicit ambivalence, which might in some cases result in avoidance of consumption altogether (van Harreveld et al., 2009). Furthermore, understanding consumers' ambivalent reactions to sustainability in digital environments would help companies to design digital solutions that support sustainable behaviors in the best possible way, as well as provide insights for social media influencers interested in sustainability topics to deliver their message effectively.

Future conceptual contributions might broaden the scope of this chapter by taking into account a broader range of psychological conflicts, such as cognitive dissonance and attribute trade-offs. Hopefully this chapter serves as an inspiration for more conceptual and empirical contributions in this important area of research.

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