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# Uncharted Territory in Research on Environmental Advertising: Toward an Organizing Framework

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**In light of increasing awareness of environmental issues, advertisers around the world have developed numerous campaigns to communicate environmentally friendly attributes. The aim of this article is to review the existing literature to identify research gaps and future directions. It is suggested that content analytical research should be expanded to audiovisual media and comparative research designs. Greater analytical precision is needed for the detection of greenwashing in advertising messages. Effects research is called to use more complex and especially audiovisual stimuli, employ behavioral measures, and examine long-term effects of environmental messages. To push the boundaries of environmental advertising research, this article suggests a novel organizing framework. Based on this framework, it is suggested to focus more on explaining advertising exposure as well as attention allocation. Also, the consideration of implicit attitudes as independent, dependent, and moderating variables marks a particularly pressing and promising avenue for future research.**

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Since the 1970s, citizens around the world have become increasingly sensitive to environmental issues, and there is an ever-growing market for sustainable and environmentally friendly products and services, ranging from energy-efficient devices and biodegradable waste bags to solar-powered electronic products (for a review, see Easterling, Kenworthy, and Nemzoff 1996; Segev, Fernandes, and Hong 2016). Against this background, it comes as no surprise that advertisers have developed numerous campaigns to communicate environmentally friendly attributes of products or services, stressing, for instance, the conservation of resources, the protection of

nature and animals, or the benefits of environmentally friendly products for one's own health. In recent years, there has been a great number of studies that have all contributed to our understanding of the nature, content, and effects of environmental advertising (e.g., Hartmann, Apaolaza-Ibáñez, and Eisend 2016; Matthes and Wonneberger 2014; Reich and Soule 2016; Schmuck, Matthes, and Naderer 2018; Segev, Fernandes, and Hong 2016).

Environmental advertising, also referred to as *green advertising*, can be defined as the attempt to influence consumers' cognitions, attitudes, and behaviors by promoting environmentally friendly features in the production, distribution, or recycling of products or services. Such features can refer to actual characteristics of a product or the production process itself, but they can also attempt to convey images without any correspondence to product or production features (Easterling, Kenworthy, and Nemzoff 1996). This stream of research unequivocally demonstrates that environmental messages can enhance attitudes and behaviors about brands, products, and services. At the same time, environmental advertisements can also mislead consumers due to vague or false claims, thereby harming brand or product outcomes.

The aim of this article is to review the existing literature to identify research gaps as well as future directions. In its first step, this review briefly summarizes research on the content of environmental advertising and outlines major research gaps. In a second step, key insights and open questions on the effects of environmental advertising are outlined. This review is then followed by a call to put more emphasis on explaining exposure, as well as attention, on implicit attitudes and on theory building.

## KEY LITERATURE

### Content of Environmental Advertising

#### *Summary*

First, research examining the content of green advertising campaigns looked at message claims. In their seminal

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study on U.S. magazine advertising, Carlson, Grover, and Kangun (1993) distinguished five different foci in green advertising messages: environmentally friendly product attributes (product orientation), environmentally friendly methods of production (process orientation), environmental image claims (image orientation), independent environmental statements (environmental fact), and a combination these four. In addition, scholars have analyzed the extent to which these claims are misleading or vague, which has been termed greenwashing (Carlson, Grove, and Kangun 1993). More specifically, *greenwashing* (Carlson, Grove, and Kangun 1993; Kangun, Carlson, and Grove 1991; Parguel, Benoît-Moreau, and Russell 2015; Naderer, Schmuck, and Matthes 2017) is defined as “the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service” (TerraChoice 2009, p. 1). For instance, Kangun, Carlson, and Grove (1991) proposed three types of misleading claims: (1) vague or ambiguous, (2) omission of important information, and (3) false/outright lie. Such practices were especially present during the early stages of green advertising (Davis 1991). An analysis of all editions of 18 magazines in 1989 and 1990 found that 58% of all green advertisements contained at least one misleading claim. Vague or ambiguous claims were the most common, followed by omitted information (Kangun, Carlson, and Grove 1991). A follow-up study found that, in particular, advertisements that represented environmental benefits of products or the environmentally friendly image of an organization contained vague or ambiguous claims (Carlson, Grove, and Kangun 1993). A more recent study, however, found that the majority of green ads in magazines were deemed acceptable (Segev, Fernandes, and Hong 2016). Other studies have investigated gain versus loss, current generation versus future generation, taking less versus doing more (Ahern, Bortree, and Smith 2012), or the driving force behind ads, that is, planet preservation, animal life, and personal health (Wagner and Hansen 2002).

As one of the few longitudinal studies, Easterling, Kenworthy, and Nemzoff (1996) has analyzed green advertisements in three American consumer magazines over 25 years. The authors observed a sharp increase in green advertising in the 1970s, followed by a decline from the mid-1980s, and an increase from 1990 to 1994. When comparing claim types over time, findings differ from study to study. Although most studies find that factual claims are rare (Easterling, Kenworthy, and Nemzoff 1996), image claims are more prevalent in some studies (Ahern, Bortree, and Smith 2012) and less so in others (Leonidou et al. 2011), which may be explained by different sampling frames. One key finding, however, is that deceptive forms of green advertising are decreasing while

acceptable forms are increasing over time (Leonidou et al. 2011). In one of the few comparative studies, Carlson et al. (1996) found that ad claims are less concrete in the United States compared to in the United Kingdom, Australia, and Canada.

### Research Gaps

As should be apparent from this brief review, there are four clear research gaps. First, with a few exceptions (e.g., Peterson 1991), green advertising was examined primarily for print media, so research should be expanded to different media outlets, such as TV and online (Segev, Fernandes, and Hong 2016). Audiovisual media are especially suited to transfer emotional environmental messages and should thus be studied to a greater extent. Ideally, the strategies of presenting environmental claims in several media types should be compared.

Second, and closely related to that, the executional and visual aspects of green campaigns deserve more attention (Banerjee, Gulas, and Iyer 1995; Leonidou et al. 2011; Segev, Fernandes, and Hong 2016). This is a particularly pressing research gap because the visual and emotional dimensions of green advertising do greatly matter when it comes to effects on attitudes and behaviors (Hartmann and Apaolaza-Ibáñez 2008, 2009; Hartmann, Apaolaza-Ibáñez, and Eisend 2016). One may assume that visual aspects become more important over time, especially in audiovisual media. Parguel, Benoît-Moreau, and Russell (2015) introduced the term *executional greenwashing* to describe nature-evoking elements in association with a product that is not factually eco-conscious. Pleasant nature imagery may be misused in green advertising to induce false perceptions of environmental benefits without referring to any actual sustainable product or service features. Yet we lack content analyses that specifically focus on the executional greenwashing phenomenon (Baum 2012).

Third, when it comes to greenwashing, scholars have mainly focused on three different types (i.e., vague, omission, false/outright lie; Naderer, Schmuck, and Matthes 2017). However, greenwashing is more complex than that. According to TerraChoice (2009), there are several ways in which a company can mislead consumers: hidden trade-off, no proof, vagueness, irrelevance, lesser of two evils, fibbing, and worshipping false labels. With one exception (Baum 2012), we lack insights about the prevalence of these greenwashing practices in international advertising.

Fourth, there is a clear lack of systematic comparative research (Baum 2012). Countries differ in their degree of environmentalism and environmental performance (VanDyke and Tedesco 2016). Countries also differ along

important cultural dimensions, such as individualistic and collectivistic orientations (de Mooij and Hofstede 2010). The degree of environmentalism as well as cultural dimensions may help understand why messages resonate in some countries but not in others. Advertisers may be aware of these aspects, and this may drive their creative decisions. One could theorize, for example, that the level (and types) of greenwashing in environmental advertisements should be smaller in countries that are high as compared to low in environmental performance. To test these claims, comparative content analytical studies must compare not just two or three countries (e.g., Baum 2012); they must incorporate a large number of countries in a multilevel structure. This would allow a systematic test of the roles of macrolevel factors. Although such designs require a considerable amount of effort, they have been used in other areas of advertising research (Matthes, Prieler, and Adam 2016). Automated content analyses, crowdcoding as well as recent developments in computational communication science may open up new opportunities for comparative research (see Arendt and Karadas 2017; Lind, Gruber, and Boomgaarden 2017; Trilling and Jonkman 2018; Welbers, van Atteveldt, and Benoit 2017).

## Effects of Environmental Advertising

### Summary

Especially two-process models such as the elaboration likelihood model (ELM; Petty and Cacioppo 1986) have been used to differentiate the effects of environmental advertising. In this context, *argument-based processes* refer to the persuasiveness of functional attributes that contain relevant environmental advantages of a product or brand (Hartmann and Apaolaza-Ibáñez 2009; Matthes, Wonneberger, and Schmuck 2014; Roberts 1996). Such attributes may refer to environmentally friendly production, distribution, or recycling facts, which have been shown to impact purchase intentions and brand attitudes (Hartmann and Apaolaza-Ibáñez 2009; Matthes, Wonneberger, and Schmuck 2014). The arguments can be perceived as strong or weak and explain why a message has positive effects on attitudes and behaviors or no effects at all. The ELM also suggests heuristic processes, which refer to effects of heuristic cues such as labels, certifications, or brand-specific environmental labels. Spack et al. (2012), for instance, were able to demonstrate a positive effect of green labels on the intention to buy. Although heuristics are different from arguments, it should be noted that environmental labels, for instance, can also be processed as arguments because they contain an environmental claim.

Finally, affective processes involve (mostly positive) emotions in response to environmental messages (Hartmann et al. 2017; for negative affects, see Hartmann et al. 2014). In particular, the visual representation of pleasant natural scenery can automatically activate positive emotional reactions that can be observed both at the subjective and the physiological level (Easterling, Kenworthy, and Nemzoff 1996; Hartmann and Apaolaza-Ibáñez, 2009; Matthes, Wonneberger, and Schmuck 2014). These positive emotions are transferred to brands in an emotional conditioning process; that is, the positive affect generated by visual imagery becomes associated with the brand after repeated pairing. Affective processes can run in parallel with argument-based processes (Schmuck, Matthes, and Naderer 2018). In this context, Hartmann and Apaolaza-Ibáñez (2009) explained the positive effects of nature images with the concept of virtual nature experiences: Nature images stimulate pleasant feelings, similar to those in a genuine natural experience, and can thus contribute to positive brand perception (Hartmann and Apaolaza-Ibáñez 2009; Hartmann et al. 2017).

The effects of these processes (or mediating mechanisms for attitudinal and behavioral effects) have been theorized to depend on consumers' environmental values and attitudes. As the ELM (Petty and Cacioppo 1986) suggests, argument-based processes should be more important to consumers with high as compared to low involvement (De Vlieger, Hudders, and Verleye 2012; Hartmann and Apaolaza-Ibáñez 2009; Lee et al. 2012). However, findings are mixed. While some studies have found stronger effects for highly involved consumers (Chan and Lau 2004; Kinnear and Taylor 1973), others have found the opposite (Schuhwerk and Lefkoff-Hagius 1995) or only a marginal role of consumer involvement (Matthes, Wonneberger, and Schmuck 2014). Another key predisposition is advertising skepticism (Matthes and Wonneberger 2014). Xie and Kronrod (2012), for instance, suggest that consumers low in advertising skepticism perceive an advertised company as more competent when there are precise numbers present in advertisements. By contrast, skeptical consumers have been found to be less affected by numerical precision. This means, some message features may work for some consumers but not for others (see also Matthes, Wonneberger, and Schmuck 2014). Besides consumers' attributes, scholars have looked at various other aspects, such as message framing (Chang, Zheng, and Xie 2015), claim type (Chan 2000), and other ad, brand, and product factors (e.g., Chang 2011; Davis 1995; Montoro-Rios et al. 2006).

Exposure to green campaigns may influence consumer attitudes and behaviors not only in positive ways. As explained previously, green advertisements may contain



confusing truths; that is, green product or process attributes may be incorrect, incomplete, exaggerated, or misleading. If consumers realize that an advertisement contains greenwashing, they have been found to react with increased skepticism, leading to negative advertising and product attitudes (Schmuck, Matthes, and Naderer 2018). Despite the frequent use of greenwashing claims in advertising (Baum 2012), we lack research on individuals' perceptions of greenwashing and the consequences for attitudinal outcomes. Greenwashing impressions have been operationalized in various ways, such as green advertising skepticism (Finisterra do Paço and Reis 2012), ad credibility (Tucker et al. 2012), or perceived deception (Newell, Goldsmith, and Banzhaf 1998), as well as perceived greenwashing (Chen and Chang 2013). Such outcomes may negatively influence brand attitudes and behaviors (Carlson, Grove, and Kangun 1993; Kangun, Carlson, and Grove 1991; Segev, Fernandes, and Hong 2016; Schmuck, Matthes, and Naderer 2018).

The key question is this: To what extent are consumers able to detect deceptive greenwashing strategies? Parguel, Benoît-Moreau, and Russell (2015) observed that executional greenwashing was not perceived as misleading among consumers. Similarly, a recent study (Schmuck, Matthes, and Naderer 2018) suggests that consumers do not recognize vague greenwashing claims, and this finding is robust even for those with high environmental concern or knowledge. Vague claims, when combined with pleasing nature imagery, can even lead to more positive brand attitudes (see also Hartmann and Apaolaza-Ibanez 2008, 2009). When it comes to false claims, Newell, Goldsmith, and Banzhaf (1998) demonstrated that such green claims increased consumers' perceptions of deception, decreasing brand attitudes and purchase intentions. In contrast, some of the findings of Schmuck, Matthes, and Naderer (2018) suggest that individuals with higher environmental expertise may be able to detect false textual claims, while less knowledgeable individuals do not tend to react negatively to fabricated claims. However, when a nature-evoking image was added to a false claim, the critical perceptions of the advertisement's content was inhibited. It is also interesting to note that environmental concerns or green attitudes are sufficient to detect an advertisement's misleading intention, but objective topical knowledge (i.e., about recycling, packaging, or pollution) is necessary to recognize false claims (Schmuck, Matthes, and Naderer 2018).

### *Research Gaps*

Although there is a wealth of studies looking into the effects of environmental messages, important research gaps remain. On the theory side, a large share of research

has examined the role of ad, brand, and product factors (i.e., message features) independent from consumer characteristics (e.g., Davis 1995; Montoro-Rios et al. 2006). As a consequence, we are far from having a comprehensive picture of how message and consumer characteristics interact. The problem lies in the tremendous heterogeneity of message and recipient features. Due to a lack of an overarching theoretical framework, some studies manipulate some message features while testing some recipient characteristics, yet other studies examine the same phenomenon but with a different combination of message and recipient characteristics, ultimately leading to conflicting conclusions. One prime example for this observation is the role of consumers' green involvement. While there is some evidence that argument-based ads impact brand attitudes only when green involvement is high (Matthes, Wonneberger, and Schmuck 2014), other findings suggest (Schuhwerk and Lefkoff-Hagius 1995) that less involved consumers react more positively to environmental claims. Yet these studies crucially differ in the employed messages as well as sample characteristics. Also, the measurement of green consumer involvement differs from study to study (i.e., as knowledge, environmental concerns, green consumer attitudes, or purchase intentions). At minimum, scholars are called to measure and statistically control several dimensions of environmental involvement at the same time. Ad, brand, and product factors should not be arbitrarily selected from study to study; they should be embedded in a theoretical framework that is also connected to content analytical findings. This may help to flesh out key message factors that can then be combined with key dimensions of environmental involvement.

There is a clear lack of research on the effects of greenwashed advertising. A few studies have examined the effects of vague claims, false claims, as well as executional greenwashing, but the available body of evidence is far from being conclusive. Besides testing the effects of greenwashing for different product categories and brands, research should pay more attention to the various facets of greenwashing. No research so far has systematically investigated how images and logos that give a wrongful impression of a third-party endorsement are perceived by consumers. We also have virtually no knowledge about the effects of truthful but unimportant claims or claims that promote the lesser of two evils (see TerraChoice 2009). It should be noted that some studies on greenwashing effects (e.g., Newell, Goldsmith, and Banzhaf 1998; Nyilasy, Gangadharbatla, and Paladino 2014) have worked with student samples. Because education arguably matters for the detection of greenwashing, experimental research with nonstudent samples is warranted.

In addition, we are far from understanding how consumer literacy can be built to protect consumers from the effects of greenwashing. Recent evidence suggests that greenwashing perceptions cannot be understood in isolation from argument-based and affective processes (Schmuck, Matthes, and Naderer 2018). Thus, research should systematically manipulate greenwashing characteristics together with argument-based features and affect-based features. This is important because parallel processes may cancel each other out. For instance, greenwashed elements may dampen while affective cues may enhance ad and brand attitudes leading to a zero-sum game overall. Manipulating greenwashing in isolation from other message characteristics may therefore be misleading.

On the methodological side, similar to content analytical research and with some notable exceptions (e.g., Hartmann, Apaolaza-Ibáñez, and Eisend 2016), most experimental studies have employed static stimuli, such as print ads. Although audiovisual ads may be rather complex, our experimental designs must be high in internal validity. That is certainly the case for print messages, such as text or simple pictures, as they can be easily manipulated. Yet we cannot generalize our findings to the whole array of advertising messages, and we may especially overlook the role of more complex message characteristics, such as the roles of music or narration, just to name a few (for a discussion, see Geuens and De Pelsmacker 2017).

In terms of generalizability, it also remains an open question whether findings on attitudinal outcomes as well as behavioral intentions are informative when it comes to true behavior. In fact, there is almost a complete lack of behavioral measures. Self-reports used in survey and experiments, including behavioral intentions, are severely limited in explaining behavioral outcomes (Baumeister, Vohs, and Funder 2007). More specifically, self-reports may lead to a correction of spontaneous impulses because of self-presentation or attitude correction. Surprisingly, however, social desirability has not been included in studies on environmental advertising. As one exception, Schmuck, Matthes, and Naderer (2018) report relationships between social desirability, the experience of virtual nature feelings, and greenwashing perceptions. Clearly, the primary purpose of research on environmental advertising is to understand how people actually behave, that is, what they really purchase in contrast to what they say they purchase. This is a crucial difference because it is “abundantly clear” that “people have not always done what they say they have done, will not always do what they say they will do, and often do not even know the real causes of the things they do” (Baumeister, Vohs, and Funder 2007, p. 397). Thus, “research may find it

beneficial to monitor actual purchasing behavior to obtain the most accurate indication of green behaviors and to avoid the potential difference between stated behavior and actual purchasing” (Moser 2015, p. 172). At minimum, future scholarship should include and statistically control measures of social desirability and ideally employ behavioral measures—even though they are demanding in terms of resources and feasibility.

In addition to the lack of behavioral research, there is a dearth of research on the long-term effects of environmental advertising. Most if not all experiments and surveys were conducted at one point in time, not allowing to test the longevity of effects. This is troublesome, because effects observed in the laboratory may quickly fade away and may not be of relevance in real-world settings when competing advertisements about several brands are present. Emotional conditioning effects, for instance, are conceptualized as long term (Hartmann and Apaolaza-Ibáñez 2009), but this has never been tested. Future research should therefore systematically analyze the longevity of environmental advertising effects, either in longitudinal experiments or panel surveys. Cross-sectional surveys are of limited value because they are unable to address causal order.

## SHIFTING THE SCOPE OF RESEARCH ON ENVIRONMENTAL ADVERTISING

The insights presented in the prior section show that most of the research to date focuses on examining the content and effects of green advertising. It was argued that content analytical research needs to pay more attention to audiovisual media, the roles of visuals, as well as to country and culture differences. When it comes to the effects of green advertising, more externally valid research employing audiovisual stimuli as well as true behavioral measures seem necessary. This suggests that some methodological limitations have compounded the inconclusiveness of prior empirical research. When it comes to theoretical approaches, three additional problems should be noted: (1) the dearth of research on exposure and attention, (2) the neglect of implicit attitude theories, and (3) the general lack of an organizing model on green advertising effects. In what follows, I briefly discuss these three issues.

### Exposure and Attention

Exposure can be understood both as the selection of and attention to messages. Advertising messages may target and reach consumers in all life situations, for instance, while walking the streets, reading a newspaper, watching television, or surfing the Internet. Consumers may choose

to avoid advertisements altogether, by, for instance, skipping over or muting commercials (Fransen et al. 2015). Beyond such mechanical avoidance, consumers may tune out commercial messages at the cognitive level, simply by not paying attention to ads. Research on selective exposure demonstrates that individuals are more likely to select advertisements in line with their views and interests (e.g., Marquart, Matthes, and Rapp 2016). Furthermore, there is a wealth of research showing that especially emotional or entertaining messages are likely to generate attention among consumers (Fransen et al. 2015). In the context of environmental advertising, we therefore need to understand the predictors of message selection and attention.

Yet existing research has almost completely ignored the selection of and attention to environmental advertising messages (but see Hartmann, Apaolaza-Ibáñez, and Alija 2013). This is especially true for attention, where we have a very limited understanding about the predictive role of ad, brand, product, or consumer characteristics. This shortcoming is surprising considering that attention is the key precondition for any effect of environmental messages.

When it comes to message characteristics, we can assume that visual and executional aspects are key drivers of attention (Hartmann, Apaolaza-Ibáñez, and Alija 2013). In a pioneering eye-tracking study, Hartmann, Apaolaza-Ibáñez, and Alija (2013) found that, compared to other images, nature imagery resulted in significantly higher attention directed toward the advertising message. This study suggests that nature imagery may be “instilling a beneficial perceptual atmosphere without diverting attention from advertising messages and the brand” (p. 200), yet far more research is necessary to corroborate this finding.

In particular, the effects of message characteristics, such as nature imagery on attention, cannot be separated from consumer characteristics. It can be theorized that environmental consumer attitudes (i.e., green consumer involvement) are important predictors of attention, both for green arguments and green visual imagery. Messages using nature imagery, for instance, may evoke virtual nature experiences that are similar to feelings generated from real contact with nature (Hartmann and Apaolaza-Ibáñez 2009). More importantly, consumers high in green consumer involvement can be theorized to be more likely to process environmental messages compared to those scoring low on those constructs. Scholars could test this assumption using classical methodologies, such as recall and recognition, but preferably also apply behavioral measures of attention, such as eye tracking (Marquart, Matthes, and Rapp 2016).

In experiments, one could expose participants to several green and nongreen ads with varying visual imagery.

Individuals high in green consumer involvement should be more likely to expose themselves to green ads in the first place and to process the green arguments. This effect should be enhanced when a visual nature image is present. Other studies could dig deeper into the effects of several types of images, such as beautiful nature sceneries or negative images as they are used in environmental threat campaigns. In Hartmann, Apaolaza-Ibáñez, and Alija's (2013) eye-tracking study, the nature imagery was congruent with the environmental message and therefore led to more attention to the message compared to pleasant images that were unrelated to the environment (e.g., a smiling couple). However, since green advertising messages can stress (a) the conservation of resources, (b) the protection of nature and animals, and/or (c) the benefits for human health, the potential interplay of visual imagery with environmental messages is far more complex than the available body of research would suggest.

Also, the processing of environmental seals or logos, executional greenwashing, as well as the interplay of nature imagery and greenwashing arguments should be more carefully studied with eye-tracking research. Research especially needs to incorporate audiovisual and digital media, overcoming the focus of simple stimuli such as print media. Due to the narrative structure and use of music, the emotional appeal and therefore attention-grabbing nature of audiovisual environmental advertising is by far higher compared to simple print messages. Taken together, to understand the effects of green advertising on consumers, we need to reflect how consumers attend to and process the message, necessitating eye-tracking research. This is the missing link between research on the content of environmental advertising and research on effects. Without this link, our understanding of environmental advertising remains incomplete.

### Implicit Attitudes

Most work on environmental advertising departs from the assumption that an individual's conscious cognition (i.e., attitudes) drives behavior. That is, scholars frequently measure the impact of green ads on attitudes in a first step and understand purchase intentions as a consequence of attitudes. However, dual process attitude theories (Gawronski and Bodenhausen 2006) posit that behavior is driven not only by the reflective system (i.e., explicit attitudes) but also by the associative system (i.e., implicit attitudes). Explicit attitudes are those of which we are consciously aware, they are deliberative, and we can control them (see Matthes, Marquart, et al. 2016). They can be distinguished from implicit attitudes, which are “automatic affective reactions resulting from the particular associations that are activated automatically when

one encounters a relevant stimulus” (Gawronski and Bodenhausen 2006, p. 693). Accordingly, attitudes toward brands, products, or toward the environment can be measured both explicitly (i.e., via self-reports) and implicitly (i.e., by tapping automatic associations between mental representations), and the two measures may not always converge. Against this background, there are three important implications related to the notion of implicit attitudes in the context of environmental advertising.

First, explicit and implicit attitudes can be modeled as dependent variables. Given the current body of research, it is also unclear how different green advertising strategies (i.e., functional versus emotional) relate to implicit and explicit brand or product attitudes. One may assume that an argument-based process may target explicit brand or product attitudes, while an affect-based process, especially one using nature imagery, may rather affect implicit attitudes—but this needs to be tested with empirical research. In an implicit learning process, automatically activated associations (e.g., positive affect in response to nature imagery) may become associated with a brand without individuals allocating attention to an advertising message (Heath 2001). Especially in low-attention situations, such effects may be traceable only for implicit but not for explicit brand or product attitudes.

Second, implicit attitudes do matter as predictors of behavior and as moderators for the effects of environmental ads. The literature clearly shows that green brand or product attitudes do not automatically result in green purchase behavior. Although there is an increase in environmental consciousness and concern, “a majority of previous studies report that consumers’ favourable attitudes do not translate into actual buying actions and most of the consumers do not purchase green products” (Joshia and Rahman 2015, p. 139). This has been called the “green attitude behavior gap” (Peattie 2010). On one hand, this gap depends on the perceived characteristics of products and brands, such as the perceived lower quality or the perceived higher price of green products, as well as the perceived difficulty of getting access to green products in local shops (Joshia and Rahman 2015). On the other hand, consumer characteristics, such as perceived consumer ineffectiveness of buying green, lack of knowledge about green products, or income of consumers, may influence the attitude–behavior relationship (e.g., Chang 2011; Wong, Turner, and Stoneman 1996). Implicit attitudes may additionally help to predict behavioral outcomes over and beyond explicit attitudes. First, as explained by Penn (2016), green attitudes are heavily influenced by socially desirable answers and “respondents may deceive themselves that they hold attitudes even when they don’t” (p. 178). Implicit attitudes can be used to explain behavioral outcomes, especially in situations in which

respondents face resource constraints (Gawronski and Bodenhausen 2006). Following this line of reasoning, implicit attitudes may also be used to model environmental involvement, especially because explicit environmental involvement measures may be strongly affected by socially desirable responding (Schmuck, Matthes, and Naderer 2018). In other words, when individuals tend to overreport their environmental involvement due to socially desirable responding, this variable may not explain much. Implicit attitudes may have added predictive value because respondents cannot easily control them. Following this logic, we should investigate the effects of environmental advertising on explicit and implicit brand or product attitudes while treating prior implicit and explicit environmental attitudes as moderators.

Third, when it comes to exposure and attention allocation, we can theorize that implicit environmental attitudes should especially predict attention allocation under low-resource situations (Gawronski and Bodenhausen 2006). Likewise, negative implicit attitudes toward environmental issues should lead to perceptual avoidance. Given the abundance of advertising messages with which consumers are confronted each day, the addition of implicit attitudes enables us to understand why people allocate attention to environmental advertisements without conscious control or deliberative reasons. This is an important precondition for the success of green campaigns. In a pioneering study, Beattie and McGuire (2012) looked at the effects of implicit and explicit attitudes using eye-tracking methodology. They found that a person’s implicit attitude is a “psychologically significant measure since it seems to connect to the pattern of unconscious eye movements towards or away from images connected with environmental damage and climate change. The explicit measures, on the other hand, were not good predictors of attentional focus” (p. 336). Interestingly, implicit attitudes did especially determine eye movements in the first 200 milliseconds of exposure. Against this background, future research is called to use explicit and implicit measures to predict attention allocation, preferably applying eye-tracking methodology. Compared to self-reported recall or recognition measurements, eye tracking allows us to unobtrusively track perceptual processes of which consumers are not necessarily aware. Eye-tracking data also remain unaffected by social desirability.

### **Toward an Organizing Framework**

As a key challenge for future research, scholarship on environmental advertising is scattered (Lunde 2018) and lacks an overarching theoretical framework driving empirical investigations. Single studies draw on different theoretical approaches and, given the abundance of research on the topic, we lack a systematization of



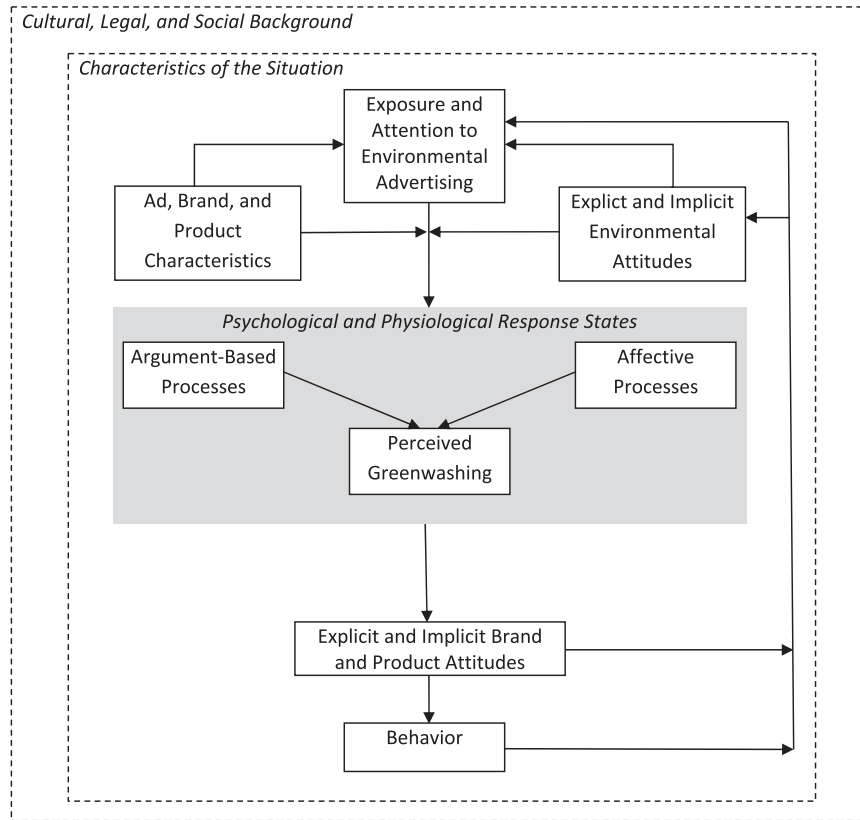


FIG. 1. Organizing framework.

independent variables, dependent variables, mediating mechanisms, and moderators. Such an organizing framework, however, is necessary for a systematic and theory-driven discussion of the literature.

Drawing on the previous discussion of the literature as well as general theoretical models of media and advertising effects (Keller 1993; Valkenburg and Peter 2013), five fundamental pillars can be posited. First, when it comes to the overdue study of attention and exposure, it can be assumed that characteristics of the ad, brand, or product, as well as consumer dispositions, serve as predictors. When it comes ad, brand, or product characteristics, we may assume the same fundamental processes as in other areas of advertising research (e.g., Rosbergen, Pieters, and Wedel 1997). However, in the context of green advertising, visual nature imagery is a key factor driving attention and thus should deserve special attention in future research. Yet the effects of visual imagery on exposure and attention do also depend on consumer characteristics, most notably, their implicit and explicit environmental involvement. How implicit and explicit environmental involvement affects attention in response to visual and/or textual green advertising remains an open question despite some first evidence (Hartmann, Apaolaza-Ibáñez, and Alija 2013).

Second, as explained, environmental messages can lead to three types of interrelated psychological and physiological responses: argument-based processes, affect-based processes, and perceived greenwashing. On one hand, the activation of one of those three processes depends on the functional and emotional attributes of green ads as well as on the use of visual imagery. On the other hand, argument-based and affect-based processes, as well as greenwashing perceptions, are determined by individuals' explicit and implicit environmental attitudes. Yet the role of explicit and implicit environmental involvement for triggering the three outcome processes dependent on message characteristics is far from being understood. The same is true for the interrelationships among the three processes. It can be assumed that argument-based and affect-based processes are determining greenwashing perceptions. That is, greenwashing perceptions may be enhanced or diminished by argument-based and affect-based processes, but theoretical and empirical insights about when one or the other effect is likely to occur are currently lacking.

Third, mediating mechanisms then inform implicit and explicit attitudes and behaviors. Here, research on implicit attitudes clearly suggests that implicit attitudes drive behavioral outcomes under low-resource conditions, that

is, when consumers lack time or processing energy. As should be apparent from this review, no research has tested these conjectures in the context of environmental advertising.

Fourth, the behavioral and attitudinal outcomes of environmental advertisements may influence future exposure to environmental messages, that is, the more positive the behavioral and attitudinal outcome is, the more likely are individuals to attend to brand or product messages in the future. For instance, once consumers have developed favorable brand attitudes, they are more likely to pay attention to this brand in the future, potentially leading to a long-term “relationship” with the brand. This can be explained by the increased accessibility of brand or product associations. Also, when consumers purchase green products, this will arguably alter their overall predispositions toward green consumption behavior. Again, no research has examined such feedback loops (but see Hartmann et al. 2017), even though they are a key part of almost all recent effects models (Slater 2007; Valkenburg and Peter 2013).

Fifth, all processes and outcomes described in this framework depend on and are embedded in cultural, legal, social, and situational contexts. Of course, this is the case for all advertising messages. In the present case, one could assume that preferences for visual imagery containing nature images may differ among cultures, although available empirical evidence in the context of environmental advertising is almost nonexistent (Hartmann and Apaolaza-Ibañez 2010). There are also legal differences among countries regulating, for instance, deception and ethical standards in advertising, and there are great differences among countries when it comes to environmental performance (Environmental Performance Index 2016). Finally, the relevance of situational characteristics is threefold: Selection and attention are crucially dependent on available cognitive resources. These are typically determined by time constraints, the presence of competing goals, or current affective states, such as moods. A green message might generate attention when those resources are available or might be completely ignored under resource constraints. Also, the generation of the psychological and physiological processes crucially depend on situational constraints. For instance, greenwashing perceptions can be understood as a mental process requiring a considerable amount of cognitive resources. Affect-based processes, by contrast, may occur without conscious awareness. Finally, the formation and consequences of implicit and explicit attitudes depend on resources. Implicit attitudes can be formed automatically, while explicit attitudes necessitate some level of cognitive attention. These are basic psychological processes and by no means novel, yet they have been ignored or held

constant in extant research on environmental advertising. The organizing framework is depicted in Figure 1.

## CONCLUSION

As this review has demonstrated, there is clear evidence for the effects of environmental advertisements on consumer outcomes, both positive and negative. However, our understanding of environmental advertising is far from complete. Future scholarship is especially called to investigate the determinants of the selection of and attention to environmental messages. Explicit and implicit attitudes need to be taken into account at the level of brands, products, and the environment more generally. There is also a great need for moderated mediation models to simultaneously model argument-based, affective, and greenwashing-related processes (i.e., mediators), while systematically varying content-related and consumer-related boundary conditions (i.e., moderators). When it comes to research methodology, self-report measures should be complemented with behavioral data, as well as implicit measures, and caution is certainly warranted when using student samples in this line of research. Finally, longitudinal and comparative content analytical research is especially urgently needed to test the universal scope of environmental messages.

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