Brigitte Naderer, Desirée Schmuck and Jörg Matthes

2.3 Greenwashing: Disinformation through Green Advertising

Abstract: As environmental issues are of growing importance in today's society, consumers are more likely to take environmental concerns into consideration when making their purchase decisions. As a consequence, companies tend to advertise their products as sustainable or eco-conscious. While many green advertisements communicate sincere green claims, some companies use advertisements as a tool to overstate or even falsify the minimization of the environmental impact of their offerings. This advertising practice is called greenwashing. This practice involves spreading disinformation concerning the services or products in question by telling outright lies or by insinuating environmental attributes through vague statements or emotional cues. In the following chapter the various types of greenwashing, its effect on consumers, and future research perspectives will be discussed.

1 Introduction

Environmental concerns are of growing importance for consumers when making their purchase decisions. Consequently, companies have been pushed to develop so called green messages about their offerings that underline their environmental efforts (Ahern et al. 2013; Baum 2012; Carlson et al. 1996; Parguel et al. 2015; Segev et al. 2016), for instance, claiming sustainability or recyclability of their products. More specifically, companies use advertising to promote their pro-environmental images and environmentally friendly product attributes (Leonidou et al. 2011). Thus, the number of companies advertising the green attributes of their products or services is rising (Ahern et al. 2013; Futerra 2008). Accordingly, there is a growing need to address the topic of green advertising in academic research (Taylor 2015). In this chapter we use the term green advertisements to describe all commercial messages that promote environmental sustainability or convey ecological messages that target the needs of eco-conscious customers, regulators, and other stakeholders (Leonidou et al. 2011).

While many green advertisements communicate sincere efforts towards sustainability and eco-consciousness, some companies use advertisements as a tool to overstate or even falsify the minimization of the environmental impact of their offerings (Carlson et al. 1993). In the early stages of green advertising in

particular, companies published advertisements presenting deceptive or confusing truths or even false promises (Davis 1991). Since environmentally friendly products are increasingly demanded by consumers nowadays, the practice of untruthful and confusing green advertisements is again on the rise (Baum 2012). This practice of misleading consumers through unsubstantial, false or vague sustainability claims is called *greenwashing* (Baum 2012; Carlson et al. 1993; Kangun et al. 1991; Furlow 2010; TerraChoice 2010). The dissemination of disinformation is a common practice in various kinds of advertising messages (e.g. nutritional claims such as “fat free”) and is used to make products or services seem more appealing to consumers (Hickman et al. 1993). However, the impact of disinformation in green advertising is considered a crucial topic on a societal level. Therefore, greenwashing can be considered as a specific type of disinformation in advertising. Advertising is proclaimed to have the power to affect social change. As the urge to buy eco-conscious sustainable products is partly based on the current ecological crisis, disseminating false or inaccurate information about green products, or trying to persuade consumers on the basis of non-factual emotional appeals, diminishes the power of advertising to mitigate this crisis (Kilbourne 1995). Hence, disinformation in green advertising is affecting the way we deal with a global problem.

The goal of this chapter is to describe the phenomena of greenwashing as an advertising practice of disinformation. For this purpose, this chapter presents research on the content of greenwashing and discusses the possible effects of greenwashing on consumers’ attitudes and behavior. In summarizing our findings, we propose some ideas for possible future research and an outline for consumer advocacy groups and policy makers, advertising practitioners, and consumers.

2 Greenwashing as Disinformation through Green Advertising

Due to the growing popularity of being eco-conscious, environmental claims are nowadays used for all kinds of products and services, including those offerings that are not inherently environmentally friendly such as airlines, plastic bottles, or batteries. Moreover, many green advertising messages present confusing truths or false promises that lack substantive information about the real environmental impact of products and services (Baum 2012). The phenomenon of greenwashing (Carlson et al. 1993; Delmas, Cuerel Burbano 2011; Kangun et al. 1991; Parguel et al. 2015) thus refers to “the act of misleading consumers regarding the

environmental practices of a company or the environmental benefits of a product or service” (TerraChoice 2010, p. 1). Baum (2012) defines greenwashing more precisely as “the act of disseminating disinformation (false information to obscure the truth) to consumers regarding the environmental practices of a company or the environmental benefits of a product or service” (2012, p. 425).

The term greenwashing is not new, but was first established in the early 1990s to describe trivial, misleading or deceptive claims in green advertising (Carlson et al. 1993; Kangun et al. 1991). Since then, many companies have made sincere efforts to reduce the environmental impact of their products. Nevertheless, there are those who overstate or simply fabricate the ecological qualities of their offerings. Consequently, “environmentally friendly”, “degradable”, or “sustainable” are abstract catchphrases that are currently used frequently in green advertising. Four main factors are driving the importance of greenwashing practices in green marketing today. First, consumers have an increased demand for environmentally friendly products. Second, sales of green products are rising. Third, government regulations are supporting environmental objectives. Fourth, there are no international industry-wide laws regulating green promotion (Horiuchi et al. 2009), however, the EU directive 84/450/EEC states regulations concerning misleading advertising for the members of the European Union (for more details see Straetmans’ chapter in this book). Thus corporations have increased the number of green products and advertisements in recent years, making disinformation through green advertising an important issue in today’s advertising practices.

The misleading presentation of ecologically relevant attributes is a worrying practice: positive information about green products is often presented in a way that is deceptive and consequently individuals who lack background information about a company’s activities may misinterpret the advertised product’s characteristics or the company’s environmental intentions (Lyon, Maxwell 2011). Furthermore, the usage of terms such as “environmentally friendly”, or “sustainable” is often hard to verify by consumers even if they have used the product or service (Carlson et al. 1993). Vague claims, emotional cues or fabricated promises, are not unique for green advertising. However, the dissemination of misleading information about ecological issues may affect the way in which the global problem of the environmental crisis is dealt with (Kilbourne 1995). It is considered especially problematic as companies receive governmental supports (Horiuchi et al. 2009) and obvious greenwashing has a negative effect on consumers’ trust (Finisterra do Paço, Reis 2012; Tucker et al. 2012). This outcome could have a negative impact on the purchase intentions of legitimate green products, consequently damaging a crucial aspect of dealing with the environmental crisis (Kilbourne 1995).

When it comes to practices of greenwashing, researchers therefore investigate 1) what techniques companies use to mislead consumers (Baum 2012; Carlson et al. 1993; Kangun et al. 1991; Segev et al. 2016), and 2) how consumers' evaluations of and reactions in response to green advertising is undermined by dishonest or overstated green advertisements (Chen, Chang 2013; Chen et al. 2014; Schmuck et al. 2016a; Parguel et al. 2015).

3 Content of Greenwashing Practices

When promoting products or services as environmentally friendly, companies aim at informing consumers about the green attributes of their offerings, generating awareness for the sustainability efforts, and creating demand for environmentally friendly products or services (Segev et al. 2016). Companies have different ways of presenting attributes of products and services as sustainable: 1) They can promote a green lifestyle; 2) they can address the connection to the biophysical environment; or 3) they can promote a corporate image of environmental responsibility (Banerjee et al. 1995).

To convey these messages, green advertising can employ one of three strategies: green advertisements either present *functional, fact-based appeals* which highlight the relevant utilitarian attributes of a product compared to conventional competing products (Hartmann et al. 2005). Alternatively, they use *image-based emotional appeals* depicting pleasant natural scenery, which might evoke positive affective responses because of the virtual association with real-world nature (Hartmann et al. 2013). Finally, green advertisements can employ a *mixed-type promotional strategy* combining functional and emotional appeals.

The majority of green advertisements in the past thirty years were issued by companies in contrast to associations or advocacy groups, and the content of these advertisements has shifted from focusing on the environmental aspects of products and services to promoting green offerings as a consumer benefit (Ahern et al. 2013). Accordingly, the goal of green advertising nowadays is primarily to make the consumers feel good about themselves when choosing a green product or service, which leads advertisements to a low level of factual green claims (Segev et al. 2016) and – as also apparent in other types of advertising – an increase in emotional appeals.

3.1 Greenwashing Based on Claims

In their content analysis, Kangun and colleagues (1991) established a typology that distinguishes four major types of greenwashing claims: 1) *false claims* that

present a straight out lie; 2) *vague or ambiguous claims* offering a broad and poorly defined claim leaving room for misinterpretation, e.g. “all natural”; 3) *claims that omit important information*, which advertise a narrow set of green attributes, while ignoring other aspects of equally important environmental concerns and 4) a *combination* of misleading elements.

TerraChoice (2010) has built on these types of claims and has established four additional concepts: 1) *unfounded claims*, which present an unsubstantial claim without accessible supporting information or reliable third-party certification; 2) *presenting false labels*, which show images and logos that give a wrongful impression of a third-party endorsement; 3) *claims of irrelevance*, which advertise a truthful environmental claim that is unimportant or unhelpful, e.g. claiming products are CFC-free (chlorofluorocarbon-free), when CFC is generally banned by law; 4) *claims promoting the lesser of two evils*, which offer information that may be true but that distracts the consumer from the greater environmental impact of the category as a whole, e.g. a fuel-efficient sports car.

Content analyses showed that particularly in the 1990s, which constitutes the beginnings of green advertising, more than half of the green advertisements investigated contained deceptive claims, most of them vague or ambiguous in nature (Carlson et al. 1993; Kangun et al. 1991; Leonidou et al. 2011). However, recent evidence reveals that disinformation through green advertising is still an issue: Baum (2012) studied six of the previously defined concepts of greenwashing in a content analysis of green print advertisements in the US and the UK in 2008. The majority of the advertisements researched presented at least one misleading or deceptive claim (75% US; 51.6% UK). The most frequently applied type of greenwashing was the presentation of ambiguous or vague claims (51.7%), followed by claims that omit important information (34.4%) and unfounded claims (30%). The high levels of vague and unsubstantiated claims have been shown to be an international issue, as content analyses in India (Fernando et al. 2014) and China (Dai et al. 2014) have found that a third of print advertisements present ambiguous and unfounded statements.

However, another recent analysis (Segev et al. 2016) of print advertisements showed that more than half of all green advertisements (62.3%) can be characterized as credible. This is of course good news, yet 25.1% were still coded as vague or ambiguous, and 11.7% were regarded as incomplete statements. The researchers also looked into the usage of environmental logos, which give the consumers the impression of a third-party endorsement of the presented product or service, and can be regarded as an important and easily understandable source of information for consumers. In total, 15% of the 617 advertisements analyzed presented a logo, of which 67.7% were illegitimate (Segev et al. 2016).

Hence greenwashing is not only a technique that works with explicit claims, but also includes a more emotional or intuitive aspect by the use of logos or specific images (Parguel et al. 2015).

3.2 Executional Greenwashing

In fact, visual demonstrations of pleasing nature imagery are frequently used in green advertising (Hartmann, Apaolaza-Ibáñez 2008; Matthes et al. 2014; Hartmann, Apaolaza-Ibáñez 2009). For example, Segev and colleagues (2016) showed that 37.6% of all advertisements presented elements of vegetation, and 13.9% showed images of landscapes and animals. Hartmann and Apaolaza-Ibáñez (2009) also state that ecological attributes of a product or brand are often communicated in the background of an advertisement which presents a beautiful unspoiled landscape. Previous research has shown that natural imagery in green advertisements can evoke positive emotional responses in consumers (Hartmann, Apaolaza-Ibáñez 2008, 2009, 2012; Matthes et al. 2014), which can lead to higher advertisement and brand evaluations (Matthes et al. 2014).

Consequently, Parguel and colleagues (2015) introduced another dimension of disinformation through green advertising that expands its definition beyond the use of textual claims. They use the term of *executional greenwashing* to define the practice of presenting so-called, *nature-evoking elements* in association with a product that is not factually eco-conscious (2015, p. 108). They conclude that the usage of such pleasant nature imagery may be misused in green advertising to induce false perceptions of a company's environmental efforts without referring to its actual sustainable product or service features. Therefore, in the case of executional greenwashing, nature-evoking images are paired with trivial green buzzwords such as "natural" or claims such as "go green" to evoke the feeling of a product being environmentally friendly without factual basis, hence creating disinformation about a product or service. However, content analyses, which specifically focus on the use of images in green advertisements are still lacking. Baum (2012) states that image interpretations in quantitative content analysis are much more subjective and require a higher level of interpretation. Still, including background imagery or icons into the analysis makes it possible to conduct a more nuanced interpretation of the advertisement, which is why the coding of visuals in future content analyses is warranted.

Additionally, Baum (2012) points out that it is not equally possible to examine the different types of greenwashing claims. In her analysis, identifying false claims proved to be unfeasible, as it requires extensive background knowledge about the service or product promoted, which also describes the challenge consumers face when confronted with claims in advertising. Recent events however,

such as the Volkswagen scandal in the fall of 2015, show that companies do commit the practice of lying in their advertisements (Lynes 2015) and it is therefore necessary to investigate all possible greenwashing strategies.

4 Effects of Disinformation in Environmental Advertising on Consumers' Attitudes and Behavior

Despite the excessive use of greenwashing claims in advertising, there is a dearth of research investigating the effects of these claims on individuals' perceptions of disinformation through green advertising and its consequences on attitudinal outcomes. The few studies that investigated how consumers perceive misleading green advertisements used a variety of outcome measures ranging from rather broad conceptualizations such as *green advertising scepticism* (Finisterra do Paço, Reis 2012) or *ad credibility* (Tucker et al. 2012) to more specific measures such as *perceived deception* (Newell et al. 1998) or *perceived greenwashing* (Chen, Chang 2013).

As a key construct in the research area, *perceived greenwashing* refers to individuals' mistrust of green claims in advertising because they are misleading in terms of words or visuals, are vague or not provable, are exaggerated, or mask important information (Chen, Chang 2013). First research evidence suggests that individuals negatively evaluate advertised brands when they mistrust companies' environmental efforts. Nyilasy, Gangadharbatla, and Paladino (2014) found that additional information about companies' environmental efforts in advertising decreases consumers' attitudes to advertising and purchase intentions when a company's actual environmental performance is low. In contrast, when no additional information about companies' environmental efforts was presented, the same advertised product and brand was evaluated favorably. Hence, the question arises whether consumers are even able to detect deceptive greenwashing strategies when they are not equipped with detailed background information about a company's full portfolio of activities (Lyon, Maxwell 2011).

An experimental study by Newell and colleagues (1998) revealed that false textual claims in green advertising increased consumers' perceptions of deception, which in turn lowered the advertiser's credibility, advertising and brand attitudes, and purchase intentions. In contrast, Parguel and colleagues (2015) found that an executional greenwashing strategy, using nature-evoking images in advertising, was not deemed as misleading among consumers, but even enhanced their perceptions of the advertised brand's ecological image and led

to more favourable brand attitudes than the same advertisement without natural imagery (2015). The greenwashing strategy was only unmasked when additional information about the brand's actual environmental performance was provided by adding a traffic light label.

This finding is striking because it suggests that the simple presence of a nature-evoking image may lead to more positive attitudinal outcomes among consumers than an advertisement without visual cues for the very same product. Hence, although consumers might be able to detect false textual claims as greenwashing (1998), they may still be susceptible to the greenwashing strategies of advertisers that enhance a brand's ecological image merely by adding nature-evoking images in advertisements (2015).

However, as in other fields of advertising, consumers' involvement with the issues relating to the advertisement has to be taken into account to entirely understand consumers' responses to an advertising message (Parguel et al. 2015). In the realm of green advertising, a lion's share of research suggests that individuals differ in how they respond to persuasive appeals depending on their level of *environmental involvement*. Involvement refers to the degree to which an individual perceives an attitude object as personally relevant or salient (Petty, Cacioppo 1986). Extensive literature provides a variety of conceptualizations for environmental involvement (for a discussion, see Matthes et al. 2014). One conceptualization is *environmental concern*, which can be described as awareness of environmental problems and perception of the necessity to protect the environment (e.g., Finisterra do Paço, Reis 2012; Bickart, Ruth 2012; Hartmann, Apaolaza-Ibáñez 2012; Schmuck et al. 2016b; Schmuck et al. 2016a). Second, scholars have conceptualized green involvement as a general positive *attitude toward green products* (e.g., Bech-Larsen 1996; Roberts 1996). A third definition of highly involved green consumers relies on their self-reported *green purchase behavior* (e.g., Chang 2011; Shrum et al. 1995). Finally, consumers' *objective knowledge* or *expertise* about environmental issues serves as an important indicator for their involvement with the environment (Schmuck et al. 2016a; Parguel et al. 2015).

Highly involved green consumers have long been considered as particularly skeptical (Finisterra do Paço, Reis 2012; Shrum et al. 1995). It has been assumed that environmentally involved consumers may be more inclined to penalize products or brands that make poor environmental efforts and may be more likely to critically examine an advertisement (Newell et al. 1998). However, recent findings reveal that vague claims such as images of nature in advertising are not detected by highly involved consumers and thus question the widely believed notion of the skeptical green consumer (Matthes, Wonneberger 2014; Schmuck

et al. 2016b). Matthes and colleagues (2014) found that highly involved consumers evaluated an argument-based functional appeal more positively compared to those with lower involvement. However, vague image-based advertisements that presented no substantial information about the environmental features of a product also exerted a positive effect on consumers' advertisement and brand attitudes irrespective of their involvement level (Matthes et al. 2014). Thus the mere association of a brand with textual or visual green claims led to more favorable brand associations among highly involved individuals, no matter whether the advertisement presented objective factual information about the brand's greenness or contained solely visual green cues.

In the specific context of disinformation through green advertising, research on the moderating role of environmental involvement is scarce. There is first evidence that neither high environmental concern (Newell et al. 1998) nor high knowledge about environmental issues (Parguel et al. 2015) can facilitate the recognition of vague misleading green advertising cues and thus prevent consumers from falling into the greenwashing-trap. Parguel and colleagues (2015) found that simple nature-evoking images enhanced a brand's ecological image among consumers with low environmental knowledge but also among those with high expertise, although to a lesser degree. This effect was reduced however, when indicators of a product's environmental performance such as eco labels were added. In this case, environmentally misleading, deceptive, or false claims in advertising may severely damage consumers' advertiser and brand evaluations.

A recent study by Schmuck, Matthes and Naderer (2016a) took a closer look at the effects of different types of greenwashing claims on perceived deception among consumers depending on their environmental concern or knowledge. Within an experiment employing a quota sample of 486 US consumers, the authors examined the effects of two different types of greenwashing claims for a bottled mineral water: a vague or ambiguous claim that was too broad to have a clear meaning and a false fabricated claim that presented an outright lie about the product's environmental features. Additionally, they investigated how the association of these two claim types with a nature-evoking image affected consumers' perceived deception, namely their perceived greenwashing. Findings reveal that consumers did not recognize vague greenwashing advertisements, irrespective of their level of environmental concern or knowledge. Instead, vague claims can even promote brand attitudes when they are combined with pleasing nature imagery. The reason for this positive effect is an affective process evoked by the picture that appeals directly to the consumers' emotions. In line with previous studies (Hartmann, Apaolaza-Ibáñez 2008, 2009, 2012; Schmuck et al. 2016b), they found that beautiful nature imagery activated feelings compared to

those experienced in real nature, so-called *virtual nature experiences* (Hartmann, Apaolaza-Ibáñez 2008, p. 821). Thus, consumers do not recognize disinformation in green advertising through vague ambiguous claims. Instead these claims even exert a positive effect on consumers' attitudinal outcomes.

Against the background of previous research evidence indicating that most greenwashed advertisements employ vague claims (Baum 2012; Fernando et al. 2014; Kangun et al. 1991), this result seems worrying. However, vague claims in combination with emotive imagery are not limited to green advertising, but form a common advertising strategy in almost all fields of advertising. In particular, when advertising objects arouse or elicit strong feelings such as in the realm of healthcare, political issues or advertising with children, emotive advertising appeals can lead to poorly reasoned attitudes, which points to the severe consequences of disinformation through vague emotive claims in advertising in general (see also Huddy, Gunnthorsdottir 2000).

Although less prevalent than vague claims, false green claims that present an outright lie may also bias consumers' evaluations of an attitude object. Schmuck, Matthes and Naderer (2016a) investigated the effects of these fabricated green claims on consumers' perceived deception depending on their environmental knowledge. They found that those with higher environmental expertise detected the advertisement's misleading intention when false textual claims were presented. Less knowledgeable individuals did not react negatively in response to the advertisement, presumably because of a less critical elaboration of the presented claims. However, when a nature-evoking image was added to a false claim, highly knowledgeable individuals fell victim to the emotional virtual nature experience – as in response to the vague claim – and did not unmask the advertisement's outright lie. Hence, those who detected greenwashing most easily when the false claim was presented without a natural image recognized disinformation through greenwashing to a lesser degree when the advertisement contained a nature-evoking image. Thus, the positive emotions induced among those with higher environmental involvement inhibit critical perceptions of the advertisement's content. Put differently, the affective process can override the critical elaboration, and highly knowledgeable individuals see less greenwashing in those advertisements compared to advertisements without beautiful nature imagery. Thus, this evidence suggests that highly involved individuals are particularly susceptible to disinformation in advertising through emotive appeals (e.g., pleasant imagery), which chimes with previous findings indicating that people who are highly involved with an issue are particularly susceptible to involve emotions in their reasoning (Huddy, Gunnthorsdottir 2000). Hence, when attitudes are emotion-laden such as in the realm of environmental protection, health campaigns or political advertising, emotional cues may be particularly

persuasive for those highly involved with the issue, because they weigh affective information more heavily than do the less involved.

In contrast, emotive images are less persuasive for less involved individuals. Schmuck's and colleagues' (2016a) findings revealed that individuals with lower environmental knowledge were able to recognize the advertisement's greenwashing intention when an additional image was present presumably because the nature imagery is less persuasive for these individuals. Instead, the image draws greater attention to the obvious contrast between the false claim and the pleasing imagery and thus facilitates unmasking the misinforming claim among those with less environmental knowledge (Hartmann et al. 2013). Consequently, for these consumers the cognitive process was stronger than the affective process because of their lower emotional affinity towards nature. Thus, depending on consumers' environmental knowledge and the presence of a visual cue in the advertisement, false claims might enhance perceived greenwashing, while vague claims were not recognized as greenwashing at all. In contrast to environmental knowledge, environmental concern did not enable consumers to notice greenwashing, either through vague or false claims. This finding corroborates with previous research (Newell et al. 1998), indicating that being worried or concerned about the environment is not sufficient to detect an advertisements' misleading intention. Rather than environmental concern, objective topic knowledge of for example, recycling, packaging, or pollution, is necessary to recognize false claims.

In sum, research so far has shown that vague green advertising claims are not perceived as greenwashing among consumers and may even positively influence brand attitudes and purchase intentions, especially when the advertisement contains pleasing images of nature (Matthes et al. 2014; Schmuck et al. 2016a). However, when companies go too far and employ outright lies in advertisements (e.g., claiming that a plastic bottle is the most environmentally friendly product in the world), consumers might detect the advertisement's misleading intention depending on their expertise and the visual layout of the advertisement. If consumers discover greenwashing, this can backfire on the product and corporate brand evaluations (Nyilasy et al. 2014). Thus, advertisers should follow a responsible approach when employing green marketing strategies, since any perception of deception on the part of consumers may result in negative attitudes toward the advertisement, the brand and the advertiser (Newell et al. 1998).

Overall, research on the effects of misleading green advertising is still scarce. Only a few studies have examined the effects of disinformation through green advertising. Future research should follow up on their findings and examine the effects of misleading green advertisements for different product

categories and brands. Furthermore, the present effect studies have not sufficiently researched all the existing types of greenwashing. More studies that investigate the effects of executional greenwashing, the usage of illegitimate third-party endorsement and the various greenwashing claims are needed. Moreover, there is a dearth of research on the long-term effects of greenwashed advertising. Finally, up until now, many studies investigating greenwashing effects (e.g., Newell et al. 1998; Nyilasy et al. 2014) employed student samples, which cannot be generalized to a broader population of green consumers. Therefore, to fully understand the effects of disinformation in terms of greenwashing in environmental advertising, more experimental research with non-student samples is warranted.

5 Conclusion

The existing body of research shows that consumers are affected by the use of misleading environmental claims in their attitudes and behavior. However, studies also reveal that different types of greenwashing are more difficult to identify than others, even for highly involved and informed consumers (Schmuck et al. 2016a). Previous research even suggests that more involved individuals are most influenced by emotive appeals such as nature imagery (Schmuck et al. 2016b; Huddy, Gunnthorsdottir 2000). As vague claims and appealing nature imagery are commonly used tools in today's green marketing campaigns (Baum 2012; Segev et al. 2016), it is a worrying result that consumers cannot recognize these misleading intentions. More research investigating the potential of executive greenwashing through the usage of nature imagery and possible counter mechanisms is therefore warranted.

Segev and colleagues' (2016) content analysis has shown that advertisements presenting environmental facts are less disposed to deceive consumers. Hence, it is recommendable to increase the usage of factual claims to ensure the avoidance of misinforming consumers. As vague and ambiguous claims still dominate greenwashing practices in environmental advertising (Segev et al. 2016; Baum 2012; Fernando et al. 2014; Carlson et al. 1993; Kangun et al. 1991; Leonidou et al. 2011), it is clear that disinformation is a crucial part of green advertising. Yet in the interest of consumer information, advertisers should substantiate their claims by presenting more details on the green product or service. However, given the finding that emotional appeals such as nature imagery are very successful in persuading consumers (Huddy, Gunnthorsdottir 2000; Schmuck et al. 2016b), the incentives for advertisers to change their advertising strategies is low.

As a regulatory attempt, it is our suggestion to provide consumers with more detailed information about a company's actual efforts to preserve nature. As an example, Parguel and colleagues (2015) discuss the suggestion of adding a traffic light label in the advertisement to give information on the environmental impact of the advertised product or service. Additionally, the usage of approved and official eco-labels would help consumers to understand the ecological contributions more intuitively (Bickart, Ruth 2012). As emotional appeals in green advertising are able to reach consumers on an intuitive level, we would suggest that regulatory information should work similarly. Hence obligatory labels or signifiers like the traffic light added by third-party experts could help consumers to better understand the true environmental impact of the advertised product or service. It is, however, an important directive for future research to investigate the issues of regulatory attempts further so as to receive insight into the best ways of informing consumers about the actual environmental efforts of a company.

Segev and colleagues (2016) suggest that it would be recommendable to not only address the regulations of claims in green advertising, but also the usage of visual elements such as pictures or logos of environmental organizations. The presentation of non-certified graphical elements might mislead consumers to see it as a validation of a green claim. As visual elements are highly effective in convincing consumers (Hartmann, Apaolaza-Ibáñez 2008, 2009; Matthes et al. 2014) even if the presented claims are false or vague (Schmuck et al. 2016a), we would argue that binding and precise regulations are necessary. Though to establish international binding regulations proves to be challenging in practice (see Straetmans' chapter in this book).

We would also suggest that it is of key importance to increase consumers' awareness for misleading advertising practices such as greenwashing, hence developing consumer literacy programs that are part of school education (for more information on advertising critique and consumer advocacy groups see Förster's chapter in this book). Furthermore, it is helpful to promote informational online guides such as TerraChoice's (2010) site "Seven sins of greenwashing". Here, consumers can learn about the different techniques of greenwashing and to recognize the "greenwashing-sins" through an online-game. Initiatives like this may help consumers to identify precise and reliable green advertising which could minimize their susceptibility to disinformation through green advertisements. Applications such as this might also be helpful to create a general awareness of disinformation practices used in advertising.

The increased demand for green products nowadays is a positive development, which can be of importance to managing environmental issues such as air pollution or waste disposal. However, if companies continue to misuse the

consumers' desire for eco-conscious products and services by disseminating dis-information about their offerings, environmental responsible products in general might lose their prominence and trust in the marketplace. It is thus of importance that stricter advertising regulations and transparent information practices are implemented to stop greenwashing.

Publication Bibliography

- Ahern, Lee; Bortree, Denise Sevvick; Smith, Alexandra Nutter. 2013. Key trends in environmental advertising across 30 years in National Geographic magazine. In *Public Understanding of Science* 22 (4), pp. 479–494. DOI: 10.1177/0963662512444848.
- Banerjee, Subhabrata; Gulas, Charles S.; Iyer, Easwar. 1995. Shades of green. A multidimensional analysis of environmental advertising. In *Journal of Advertising* 24 (2), pp. 21–31. DOI: 10.1080/00913367.1995.10673473.
- Baum, Lauren M. 2012. It's not easy being green ... or is it? A content analysis of environmental claims in magazine advertisements from the United States and United Kingdom. In *Environmental Communication* 6 (4), pp. 423–440. DOI: 10.1080/17524032.2012.724022.
- Bech-Larsen, Tino. 1996. Danish consumers' attitudes to the functional and environmental characteristics of food packaging. In *Journal of Consumer Policy* 19 (3), pp. 339–363. DOI: 10.1007/BF00411413.
- Bickart, Barbara A.; Ruth, Julie A. 2012. Green eco-seals and advertising persuasion. In *Journal of Advertising* 41 (4), pp. 51–67. DOI: 10.1080/00913367.2012.10672457.
- Carlson, Les; Grove, Stephen J.; Kangun, Norman. 1993. A content analysis of environmental advertising claims. A matrix method approach. In *Journal of Advertising* 22 (3), pp. 27–39. DOI: 10.1080/00913367.1993.10673409.
- Carlson, Les; Grove, Stephen J.; Kangun, Norman; Polonsky, Michael J. 1996. An international comparison of environmental advertising. Substantive versus associative claims. In *Journal of Macromarketing* 16 (2), pp. 57–68. DOI: 10.1177/027614679601600205.
- Chang, Chingching. 2011. Feeling ambivalent about going green. In *Journal of Advertising* 40 (4), pp. 19–32. DOI: 10.2753/JOA0091-3367400402.
- Chen, Yu-Shan; Chang, Ching-Hsun. 2013. Greenwash and green trust. The mediation effects of green consumer confusion and green perceived risk. In *Journal of Business Ethics* 114 (3), pp. 489–500. DOI: 10.1007/s10551-012-1360-0.
- Chen, Yu-Shan; Lin, Chang-Liang; Chang, Ching-Hsun. 2014. The influence of greenwash on green word-of-mouth (green WOM). The mediation effects of green perceived quality and green satisfaction. In *Quality & Quantity* 48 (5), pp. 2411–2425. DOI: 10.1007/s11135-013-9898-1.
- Dai, Xin; Goh, Tiong-Thye; Cheng, Si. 2014. A content analysis of green advertising in China. In *Journal of Marketing Research and Case Studies* Vol. 2014, pp. 1–18. DOI: 10.5171/2014.850595.
- Davis, Joel J. 1991. A blueprint for green marketing. In *Journal of Business Strategy* 12 (4), pp. 14–17. DOI: 10.1108/eb039424.
- Delmas, Magali A.; Cuerel Burbano, Vanessa. 2011. The drivers of greenwashing. In *California Management Review* 54 (1), pp. 64–87. DOI: 10.1525/cm.2011.54.1.64.

- Fernando, Angeline Gautami; Sivakumaran, Bharadhwaj; Suganthi, L. 2014. Nature of green advertisements in India. Are they greenwashed? In *Asian Journal of Communication* 24 (3), pp. 222–241. DOI: 10.1080/01292986.2014.885537.
- Finisterra do Paço, Arminda Maria; Reis, Rosa. 2012. Factors affecting skepticism toward green advertising. In *Journal of Advertising* 41 (4), pp. 147–155. DOI: 10.1080/00913367.2012.10672463.
- Furlow, Nancy. 2010. Greenwashing in the new millennium. In *Journal of Applied Business and Economics* 10 (6), pp. 22–25.
- Futerra. 2008. The greenwash guide. Available online at www.futerra.co.uk/, checked on 4/2/2016.
- Hartmann, Patrick; Apaolaza-Ibáñez, Vanessa. 2008. Virtual nature experiences as emotional benefits in green product consumption. The moderating role of environmental attitudes. In *Environment and Behavior* 40 (6), pp. 818–842. DOI: 10.1177/0013916507309870.
- Hartmann, Patrick; Apaolaza-Ibáñez, Vanessa. 2009. Green advertising revisited. Conditional virtual nature experiences. In *International Journal of Advertising* 28 (4), p. 715. DOI: 10.2501/S0265048709200837.
- Hartmann, Patrick; Apaolaza-Ibáñez, Vanessa. 2012. Consumer attitude and purchase intention toward green energy brands. The roles of psychological benefits and environmental concern. In *Journal of Business Research* 65 (9), pp. 1254–1263. DOI: 10.1016/j.jbusres.2011.11.001.
- Hartmann, Patrick; Apaolaza-Ibáñez, Vanessa; Alija, Patxi. 2013. Nature imagery in advertising. Attention restoration and memory effects. In *International Journal of Advertising* 32 (2), p. 183. DOI: 10.2501/IJA-32-2-183-210.
- Hartmann, Patrick; Apaolaza-Ibáñez, Vanessa; Forcada Sainz, F. Javier. 2005. Green branding effects on attitude. Functional versus emotional positioning strategies. In *Marketing Intelligence & Planning* 23 (1), pp. 9–29. DOI: 10.1108/02634500510577447.
- Hickman, Beth Wallace; Gates, Gail E.; Dowdy, Richard P. 1993. Nutrition claims in advertising. A study of four women's magazines. In *Journal of Nutrition Education* 25 (5), pp. 227–235. DOI: 10.1016/S0022-3182(12)81000-4.
- Horiuchi, Rina; Schuchard, Ryan; Shea, Lucy; Townsend, Solitaire. 2009. Understanding and preventing greenwash. A business guide. Available online at http://www.bsr.org/reports/Understanding%20Preventing_Greenwash.pdf, checked on 4/2/2016.
- Huddy, Leonie; Gunnthorsdottir, Anna H. 2000. The persuasive effects of emotive visual imagery. Superficial manipulation or the product of passionate reason? In *Political Psychology* 21 (4), pp. 745–778. DOI: 10.1111/0162-895X.00215.
- Kangun, Norman; Carlson, Les; Grove, Stephen J. 1991. Environmental advertising claims: A preliminary investigation. In *Journal of Public Policy & Marketing* 10 (2), pp. 47–58.
- Kilbourne, William E. 1995. Green advertising. Salvation or oxymoron? In *Journal of Advertising* 24 (2), pp. 7–20. DOI: 10.1080/00913367.1995.10673472.
- Leonidou, Leonidas C.; Leonidou, Constantinos N.; Paliawadana, Dayananda; Hultman, Magnus. 2011. Evaluating the green advertising practices of international firms. A trend analysis. In *International Marketing Review* 28 (1), pp. 6–33. DOI: 10.1108/0265133111107080.
- Lynes, Jennifer. 2015. Volkswagen committed the cardinal sin of greenwashing: Lying. In *The Globe and Mail*, 9/24/2015. Available online at <http://www.theglobeandmail.com/report-on-business/rob-commentary/volkswagen-committed-the-cardinal-sin-of-greenwashing-lying/article26500698/>, checked on 4/2/2016.
- Lyon, Thomas P.; Maxwell, John W. 2011. Greenwash. Corporate environmental disclosure under threat of audit. In *Journal of Economics & Management Strategy* 20 (1), pp. 3–41. DOI: 10.1111/j.1530-9134.2010.00282.x.

- Matthes, Jörg; Wonneberger, Anke. 2014. The skeptical green consumer revisited. Testing the relationship between green consumerism and skepticism toward advertising. In *Journal of Advertising* 43 (2), pp. 115–127. DOI: 10.1080/00913367.2013.834804.
- Matthes, Jörg; Wonneberger, Anke; Schmuck, Desirée. 2014. Consumers' green involvement and the persuasive effects of emotional versus functional ads. In *Journal of Business Research* 67 (9), pp. 1885–1893. DOI: 10.1016/j.jbusres.2013.11.054.
- Newell, Stephen J.; Goldsmith, Ronald E.; Banzhaf, Edgar J. 1998. The effect of misleading environmental claims on consumer perceptions of advertisements. In *Journal of Marketing Theory and Practice* 6 (2), pp. 48–60. DOI: 10.1080/10696679.1998.11501795.
- Nyilasy, Gergely; Gangadharbatla, Harsha; Paladino, Angela. 2014. Perceived greenwashing. The interactive effects of green advertising and corporate environmental performance on consumer reactions. In *Journal of Business Ethics* 125 (4), pp. 693–707. DOI: 10.1007/s10551-013-1944-3.
- Parguel, Béatrice; Benoit-Moreau, Florence; Russell, Cristel Antonia. 2015. Can evoking nature in advertising mislead consumers? The power of 'executional greenwashing'. In *International Journal of Advertising* 34 (1), pp. 107–134. DOI: 10.1080/02650487.2014.996116.
- Petty, Richard E.; Cacioppo, John T. 1986. The elaboration likelihood model of persuasion. In Leonard Berkowitz (Ed.): *Advances in experimental social psychology*. New York: Academic Press, pp. 123–205.
- Roberts, James A. 1996. Green consumers in the 1990s. Profile and implications for advertising. In *Journal of Business Research* 36 (3), pp. 217–231. DOI: 10.1016/0148-2963(95)00150-6.
- Schmuck, Desirée; Matthes, Jörg; Naderer, Brigitte. 2016a. Misleading consumers with green advertising? Comparing the effects of false and vague greenwashing claims (unpublished manuscript).
- Schmuck, Desirée; Matthes, Jörg; Naderer, Brigitte; Beaufort, Maren. 2016b. Effects of environmental brand attributes and nature imagery in green advertising on brand attitude and purchase intention. In *Environmental Communication*, accepted.
- Segev, Sigal; Fernandes, Juliana; Hong, Cheng. 2016. Is your product really green? A content analysis to reassess green advertising. In *Journal of Advertising* 45 (1), pp. 85–93. DOI: 10.1080/00913367.2015.1083918.
- Shrum, L. J.; McCarty, John A.; Lowrey, Tina M. 1995. Buyer characteristics of the green consumer and their implications for advertising strategy. In *Journal of Advertising* 24 (2), pp. 71–82. DOI: 10.1080/00913367.1995.10673477.
- Taylor, C. Richard. 2015. A call for more research on 'green' or environmental advertising. In *International Journal of Advertising* 34 (4), pp. 573–575. DOI: 10.1080/02650487.2015.1077572.
- TerraChoice. 2010. The 7 sins of greenwashing. Available online at <http://sinsofgreenwashing.com/index35c6.pdf>, checked on 4/3/2016.
- Tucker, Elizabeth M.; Rifon, Nora J.; Lee, Eun Mi; Reece, Bonnie B. 2012. Consumer receptivity to green ads. A test of green claim types and the role of individual consumer characteristics for green ad response. In *Journal of Advertising* 41 (4), pp. 9–23. DOI: 10.1080/00913367.2012.10672454.