

# Different Shades of Greenwashing: Consumers' Reactions to Environmental Lies, Half-Lies, and Organizations Taking Credit for Following Legal Obligations

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## Abstract

Although corporate greenwashing is a widespread phenomenon, few studies have investigated its effects on consumers. In these studies, consumers were exposed to organizations that boldly lied about their green behaviors. Most greenwashing practices in real life, however, do not involve complete lies. This article describes a randomized  $3 \times 2$  experimental study in the cruise industry investigating the effects of various degrees of greenwashing. Six experimental conditions were created based on behavioral-claim greenwashing (an organization telling the truth vs. its telling lies or half-lies) and motive greenwashing (an organization acting on its own initiative vs. its taking credit for following legal obligations). Dependent

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variables were three corporate reputation constructs: environmental performance, product and service quality, and financial performance. Compared to true green behavior, lies and half-lies had similar negative effects on reputation. Taking credit for following legal obligations had no main effect. Only in the case of true green behavior did undeservedly taking credit affect reputation negatively. Overall, the findings suggest that only true green behavior will have the desired positive effects on reputation.

### **Keywords**

corporate social responsibility, corporate reputation, greenwashing, environmental performance, consumers, cruise industry

In times of growing concerns about global warming, pollution, deforestation, species extinction, and resource depletion, it seems only natural that organizations go green. Besides, organizations have come to realize that doing good can be beneficial for business. Research shows that corporate social responsibility (CSR) initiatives can positively affect corporate reputation, purchase intentions, and consumer loyalty (Aguinis & Glavas, 2012; S. Du, Bhattacharya, & Sen, 2010; Smith & Langford, 2009; Torres, Bijmolt, Tribó, & Verhoef, 2012). Other studies emphasize the value of a solid CSR tradition as a buffer in times of crisis (Choi & La, 2013; S. Kim, 2014; J. Klein & Dawar, 2004; Lin, Chen, Chiu, & Lee, 2011). CSR has become a normal part of organizational practice, and stakeholders increasingly expect organizations to engage in CSR activities (Becker-Olsen, Cudmore, & Hill, 2006; Johansson, 2014; Morsing & Schultz, 2006; Ramus & Montiel, 2005).

In the wake of the growing importance of CSR and green marketing, some companies are guilty of the practice of greenwashing. Generally speaking, *greenwashing* involves a discrepancy between organizations' green claims and their actual environmental performance (Delmas & Burbano, 2011; Lyon & Montgomery, 2015). Greenwashing suggests that organizations try to reap the benefits of a green positioning without behaving accordingly. The rise of greenwashing fosters CSR skepticism (Aji & Sutikno, 2015; Jahdi & Acikdilli, 2009; Nyilasy, Gangadharbatla, & Paladino, 2014; Skarmeas & Leonidou, 2013).

Various studies show that greenwashing is a widespread phenomenon. TerraChoice (2007, 2009, 2010) conducted a series of studies in the United States and Canada, testing large numbers of products with green claims

against best practices and official guidelines. The results showed that green marketing is increasingly popular and that a vast majority of the green claims are misleading. TerraChoice (2009) also provides a categorization of types (“seven sins”) of greenwashing. Its research suggests that telling complete lies about environmental performance (“sin of fibbing”) only happens sporadically (in less than 1% of the cases) but that many companies are guilty of less obvious forms of greenwashing, such as reporting environmentally friendly behaviors in such a way that they cannot be verified (“sin of vagueness”) or using unauthorized but seemingly objective green labels (“sin of worshipping false labels”). Other studies confirm that greenwashing is common in today’s business (Atkinson & Kim, 2014; Baum, 2012; Fernando, Sivakumaran, & Suganthi, 2014).

Earlier research on the effects of greenwashing on consumers shows that greenwashing, when discovered, has negative effects on consumers’ attitudes and behavioral intentions toward the brand or organization (Aji & Sutikno, 2015; Atkinson & Kim, 2014; Chen & Chang, 2013; Chen, Ling, & Chang, 2014; De Jong, Harkink, & Barth, 2018; Lim, Ting, Bonaventure, Sendiawan, & Tanusina, 2013; Newell, Goldsmith, & Banzhaf, 1998; Nyilasy et al., 2014; Parguel, Benoît-Moreau, & Larceneux, 2011). The extent to which these effects are detrimental is still open to debate. Nyilasy et al. (2014) suggest that greenwashing will backfire on the organization, but De Jong et al. (2018) conclude that it is more likely that greenwashing, compared to true green behavior, will have minor and inconsequential positive effects on an organization’s green image.

So far, research on the effects of greenwashing has focused on severe situations in which organizations tell outright lies about their environmental performance. In practice, however, most cases of greenwashing correspond to more ambiguous and less obvious situations (TerraChoice, 2007, 2009, 2010). Research that differentiates the severity of greenwashing is not yet available. This article helps to fill that gap. We experimentally investigated whether more ambiguous types of greenwashing have similar effects on consumers as do the clear and blatant ones that have been studied so far.

Our way of operationalizing more ambiguous types of greenwashing was inspired by a practical case described by Lyon and Maxwell (2011). Based on their case description, we discern between *behavioral-claim greenwashing* (a discrepancy between environmental claims and environmental behavior) and *motive greenwashing* (a discrepancy between communicated and real motives for environmentally friendly behavior). Regarding behavioral-claim greenwashing, we distinguished between organizations that told the truth, those that told half-lies, and those that lied. Regarding motive

greenwashing, we distinguished between organizations that acted green on their own initiative and those that took credit for complying with legal environmental obligations. Together, the two variables (behavioral-claim greenwashing and motive greenwashing) form a spectrum of different shades of greenwashing. We used a randomized  $3 \times 2$  experimental design to investigate their effects on corporate reputation.

## **Earlier Research and Hypotheses**

The available literature on the effects of greenwashing is rather limited. In their overview of the research, Lyon and Montgomery (2015) concluded that “the field badly needs thorough, careful empirical analysis of the impacts of greenwash, which requires both an ability to identify greenwash clearly and to measure its effects” (p. 243). Relevant literature so far focuses on three themes: the definition, drivers, and effects of greenwashing. We will briefly discuss the research within each theme. As we will explain, all three research themes have consequences for our research focus. After that, we argue that the theoretical perspective of cognitive dissonance is a fruitful starting point for research into the effects of greenwashing. Finally, using the cognitive dissonance framework and earlier research on the effects of greenwashing, we formulate the hypotheses for our study.

### *Definition of Greenwashing*

Research on the definition of greenwashing indicates that the assumption of clear and unambiguous instances of greenwashing, which dominated the greenwashing literature in the past, could be problematic. In early research on greenwashing, the concept was considered to be more or less straightforward. Greenwashing was seen as intentional communicative behavior aimed at deceiving stakeholders. Both Lauffer (2003) and Ramus and Montiel (2005), for instance, labeled greenwashing as “corporate disinformation.” Delmas and Burbano (2011) defined greenwashing as “the act of misleading consumers regarding the environmental practices of organizations (firm-level greenwashing) or the environmental benefits of a product or service (product-level greenwashing)” (p. 66). They characterized greenwashing in terms of organizations combining bad environmental performance with positive claims about their environmental performance (for a similar view, see Berrone, 2016).

Various authors have problematized this straightforward conception of greenwashing. Lyon and Montgomery (2015) drew attention to the wide variety of potentially misleading behaviors that fall under the umbrella of greenwashing: “Given our broad conception of greenwash, any [major mechanism of misleading communications] can be a variety of greenwash if applied to environmental communications” (p. 226). The range of potential greenwashing activities, then, is much wider than listings such as TerraChoice’s (2010) “seven sins of greenwashing” suggest. Several researchers elaborated on the potential broadness of greenwashing. Waller and Conaway (2011) drew attention to the role of message framing. Hahn and Lülfs (2014) discussed the way that organizations handle negative environmental events as a potential source of greenwashing, referring to strategies such as marginalization and rationalization. Parguel, Benoît-Moreau, and Russell (2015) used the term “executorial greenwashing” (as opposed to claim greenwashing) to refer to instances in which organizations do not make explicit green statements but instead suggest environmental friendliness by using cues such as imagery. Livesey (1999) drew attention to the green alliances of companies. Analyzing the Volkswagen scandal from the perspective of a communicative constitution of organizations (CCO), Siano, Vollero, Conte, and Amabile (2017) argued that greenwashing is not limited to external communication: In the Volkswagen case, “deceptive manipulation” in order to meet emission requirements must also be seen as a form of greenwashing. And Schmeltz (2014) focused on the extent to which CSR values are integrated into corporate ones, observing that CSR values and corporate values are often separate and might even be conflicting.

Bowen (2014) problematized the intentionality suggested by the original definitions, arguing that greenwashing (a) involves more than just information disclosure, (b) is often not deliberate, (c) is not necessarily initiated by companies, and (d) does not necessarily benefit companies and harm society. These observations are in line with research on the determinants, or drivers, of greenwashing, showing that deliberate deceit is only part of the picture. They are also in line with the notion of “CSR as aspirational talk” (Chaudhri, 2016; Christensen, Morsing, & Thyssen, 2013), suggesting that discrepancies between CSR communication and actual behavior might have an aspirational function as a fruitful or even necessary resource for organizational change. Besides, as Seele and Gatti (2017) argued, greenwashing accusations might be based on unrealistic expectations or miscommunication for which the organization cannot be held responsible. According to Bowen (2014), greenwashing must be seen as a (hard to delineate) part of a

broader range of organizational behaviors that can be characterized as symbolic (vs. substantial) corporate environmentalism.

In all, greenwashing is a broad and multifaceted phenomenon, and intentionally misleading stakeholders is only part of it. Knowing that, however, has limited consequences for research into the effects of greenwashing. As Seele and Gatti (2017) argued, greenwashing allegations are in the eye of the beholder: They are coconstructions between an organization and external parties. Shim and Kim (2017), for instance, showed that people's deontological orientation affects their judgment of corporate hypocrisy. Research into the effects of greenwashing focuses on stakeholders' reactions to discrepancies between an organization's environmental communication and its behaviors, regardless of the origins of such discrepancies.

### *Drivers of Greenwashing*

Research on drivers of greenwashing further complicates the notion of clear, unambiguous, and intentional acts of greenwashing in practice. Delmas and Burbano (2011) proposed a framework with four clusters of variables based on the type of actor: nonmarket external, market external, organizational, and individual psychological drivers. Lyon and Montgomery (2015) limited their distinction to external environmental versus internal organizational drivers. We will discuss possible determinants from two perspectives: strategic considerations and organizational complexity.

*Strategic considerations* involve deliberate and concerted efforts of organizations to portray themselves as more environmental friendly than justified. Determinants include pressure or incentives from market and nonmarket actors (e.g., government, investors, and consumers) and the development and maintenance of regulations (Delmas & Burbano, 2011; Lyon & Montgomery, 2015; Wood, 2014). In addition, researchers have drawn attention to societal climate, particularly liberalism and capitalism, as a macro-level factor of importance (Alves, 2009; Roulet & Touboul, 2015). In a study on the reporting of greenhouse gas emissions by electric utility companies, E.-H. Kim and Lyon (2015) confirmed the role of market and nonmarket actors and regulations. They found that times of growth led to an increased attention for stakeholders in the regulatory arena and a resulting tendency toward greenwashing whereas economic deregulation, especially in the case of lower profits, led to an increased attention for shareholders and a resulting tendency toward brownwashing. External scrutiny had a moderating effect on the influence of such strategic factors.

*Organizational complexity* refers to the less manageable side of environmental behaviors and communication. Specifically, it involves difficulties in aligning the subprocesses of realizing environmentally friendly behavior and communicating about environmental friendliness. Delmas and Burbano (2011) mentioned ineffective intrafirm communication, bounded rationality, optimistic bias, a focus on short-term successes, and organizational inertia as specific determinants. Ramus and Montiel (2005) argued that it is easy for organizations to make policy statements but that successfully implementing them is much harder. Taking a similar view, Christensen et al. (2013) drew attention to the aspirational function of CSR communication. That is, highly ambitious environmental communication might be seen as instrumental for accomplishing environmentally friendly behavior. In analyzing the Volkswagen case, Siano et al. (2017) also referred to the role of organizational complexity: “The engagement of Volkswagen’s organizational members in sustainability cannot be seen as ‘corporate responsibility in action,’ but as a shallow commitment which might push specific organizational units to be at some extent involved in ‘new’ and immoral organizational practices” (p. 33). A survey by Blome, Foerstl, and Schleper (2017) drew attention to the role of organizational culture and leadership: Ethical leadership was unrelated to the occurrence of greenwashing whereas obedience to authority had a positive relation with greenwashing.

The growing evidence on the role of organizational complexity in greenwashing practices relativizes the influence of strategic considerations in determining greenwashing to some extent. That does not mean, however, that organizations cannot or should not be held responsible for the veracity of their environmental claims.

### *Effects of Greenwashing*

Research on the effects of greenwashing on consumers and other stakeholders suggests that greenwashing has detrimental effects on people’s image of a brand or organization. But all previous studies have focused on clear, unambiguous, and extreme forms of greenwashing, which might be problematic given the research on the definitions and drivers of greenwashing—and which do not correspond to 99% of the greenwashing cases identified by TerraChoice (2007, 2009, 2010).

Until now, four types of research can be distinguished: (a) macro-level studies that focus on the relationship between organizations’ greenwashing practices and their overall performance indicators, (b) survey-based studies

that focus on the correlation between (perceived) greenwashing practices and consumer attitudes, (c) qualitative studies that explore consumer reactions to greenwashing practices, and (d) experimental studies that compare the effects of greenwashing and nongreenwashing practices.

Macro-level studies suggest that greenwashing does not have positive effects, and might even have negative effects, on organizations' overall performance. These studies show that environmental performance is either positively related to financial performance indicators (X. Du, 2015; Wu & Shen, 2013) or unrelated to financial performance (Walker & Wan, 2012) whereas greenwashing is either negatively related to financial performance (X. Du, 2015; Walker & Wan, 2012) or unrelated to financial performance (Wu & Shen, 2013). Berrone, Fosfuri, and Gelabert (2017), who used environmental legitimacy as the dependent variable in their macro-level study, came to similar conclusions: "Especially in the presence of vigilant environmental NGOs, such environmental tactics do not seem to pay off" (p. 376). But it is hard to assume causality based on these macro-level data. It is equally conceivable that financial performance affects organizations' willingness to implement a far-reaching environmental policy or that another variable, such as leadership, influences both financial and environmental performance.

Survey-based studies invariably have shown that (discovered) greenwashing practices are related to negative attitudes in consumers. Chen and Chang (2013) found that greenwashing is negatively related to green trust, with green consumer confusion and green perceived risk as partly mediating variables. In a similar study, Chen et al. (2014) found that greenwashing is negatively related to green word of mouth, with green perceived quality and green satisfaction as mediating variables. Aji and Sutikno (2015) conducted a more comprehensive study with the four variables used by Chen and Chang (2013), complementing those variables with perceived consumer skepticism and behavioral (switching) intention. Their results confirmed most of the relations found by Chen and Chang, with the exception of that between green consumer confusion and green trust. Instead, they found that perceived consumer skepticism had a central role as a mediating variable between greenwashing and green trust. In turn, green trust appeared to mediate the effects of greenwashing on behavioral intentions. And Shim and Kim (2017) found that perceived corporate hypocrisy is related to a reduced intention to share positive views of an organization and an increased intention to share negative views. But the correlational designs do not justify casual interpretations.

The two available qualitative studies provided contradictory results. Lim et al. (2013) interviewed consumers about products with green claims and analyzed their reactions when they were confronted with the notion of greenwashing. They found that participants had trouble evaluating the actual greenness behind green claims and that a confrontation with greenwashing led to fierce reactions of distrust and cautiousness as well as negative behavioral intentions regarding green products. But Atkinson and Kim (2014), who conducted a series of focus groups, found that participants frequently used rationalizations to resolve tensions between skepticism and green claims and discrepancies between green intentions and nongreen buying behavior.

Experimental designs were used in four studies. In these studies, participants were confronted with corporate or brand communication including green claims and additional information (provided by a third party) about the actual environmental performance. In these studies, greenwashing appeared to negatively affect consumers' perceptions of the greenness of an organization, varying between merely reducing the effects of the green claims to backfiring on the organization.

One of the experimental studies had mixed results. Newell et al. (1998) conducted an experiment into the effects of an advertisement with and without misleading green claims on perceived deception, advertiser credibility, attitude toward the advertisement, attitude toward the brand, and purchase intention. They found significant effects only on perceived deception and advertiser credibility. The advertisement with misleading claims had higher rates on perceived deception and a lower score for advertiser credibility but did not have negative effects on attitudes toward the advertisement and brand and purchase intentions. In a structural equation analysis with perceived deception as the independent variable, however, they found significant negative relationships with the other variables. As such, the study showed that consumers who feel misled by an advertisement think more negatively about the brand and have lower purchase intentions. The results seem to suggest, though, that the relationship between actual greenwashing and perceived deception is not strong, which might be due to a lack of skills in distinguishing true from false claims—as Lim et al. (2013) found in their study—or the rationalization processes Atkinson and Kim (2014) mentioned.

The other three experimental studies showed significant effects of greenwashing. Parguel et al. (2011) investigated how third-party ratings about sustainable performance (good, poor, no rating) affected participants' interpretation of sustainability on a corporate Web site. They found that poor

sustainability ratings had a negative effect on perceived CSR efforts, perceived intrinsic motives, and corporate brand evaluation. Nyilasy et al. (2014) conducted a  $3 \times 3$  experiment investigating the effects of green performance (high, low, no information) and green advertisements (green, general, no advertisement) on brand attitude and purchase intentions, finding positive effects of green performance and no effects of green advertising. Furthermore, they claimed that greenwashing strengthened the negative effects of a low green performance, but their data do not seem to support that claim. Also, their conclusion about negative effects of greenwashing that could “backfire” is far from substantiated. Finally, De Jong et al. (2018) conducted a  $4 \times 2$  experiment with environmental strategy (vocal green, silent green, greenwashing, silent brown) and product type (perfume and detergent) as independent variables and perceived environmental performance, perceived integrity, and purchase interest as dependent variables. They found that greenwashing had a moderately positive effect on perceived environmental performance (placing the organization between the green and brown organizations), a negative effect on perceived integrity, and no effect on purchase intention. No differences were found between the two product types.

In all, the previous studies suggest that greenwashing, when discovered, does not pay off although the evidence that it actually has a negative effect on consumers is practically lacking.

We should point out that greenwashing was described in unmistakable terms in the experimental studies. In Parguel et al. (2011), the company received a sustainability rating of 2 on a 10-point scale, falling “amongst the worst companies in its sector” (p. 21). In Nyilasy et al. (2014), participants were told that the organization “was responsible for a major environmental catastrophe recently—a large-scale chemical leak in one of their US-based plants” (p. 705). And in De Jong et al. (2018), all green claims were refuted in the third-party information. These are situations that do not correspond to 99% of the greenwashing cases that TerraChoice (2007, 2009, 2010) found, which raises the question of what the effects of milder and less conspicuous types of greenwashing would be.

### *Theoretical Perspective of Cognitive Dissonance*

To make sense of consumers’ reactions to greenwashing, De Jong et al. (2018) proposed the theoretical framework of cognitive dissonance (Festinger, 1957). This framework is based on the premise that initially believing green claims and being confronted with contradictory third-party

information will result in a state of cognitive dissonance and a desire to restore the balance between the two conflicting pieces of information. Theoretically, resolving the dissonance can be done in three ways: by rejecting the third-party information that criticizes the organization's environmental performance, by rejecting the environmental claims of the organization, and by seeking an intermediate position that acknowledges the organization's green intentions but rejects the environmental claims that are disputed. Other studies on consumers and environmental friendliness show that people indeed might take various strategies to resolve dissonance (McDonald, Oates, Thyne, Timmis, & Carlile, 2015; Tanford & Montgomery, 2015).

The first two options assume that one of the parties involved is deliberately lying whereas the third option assumes that the situation is characterized by ambiguity. For people to recognize something as a lie, they must believe that it is an intentional deception (Turri & Turri, 2015). The majority of the instances of greenwashing, however, will involve ambiguous situations, as is demonstrated in recent literature on the definition and the drivers of greenwashing. Seele and Gatti (2017) drew attention to the importance of the accusation element in identifying greenwashing: "Greenwashing only exists in the combination of misleading CSR communication with an accusation from a third party" (p. 248). Only when a reliable accuser makes the case for intentional, structural, and substantial use of greenwashing practices will consumers likely punish the organization for its false claims. In all other cases, reconciliation would be more plausible. The claims refuted by third-party information might, for instance, be part of a larger environmental policy. Or the mere fact that an organization communicates about its environmentally friendly behaviors could be seen as a sign that the organization at least has good intentions, which relates to Atkinson and Kim's (2014) finding that participants used rationalization strategies to resolve their dissonance.

The discovery of corporate greenwashing, then, does not necessarily lead to repercussions for the organization, but it minimizes any positive effects of environmental communication. This conclusion is supported by the findings from experimental studies by Parguel et al. (2011) and De Jong et al. (2018) and the results (but not the conclusions) of Nyilasy et al.'s (2014) study.

### *Research Hypotheses*

Based on prior studies and the cognitive dissonance perspective, we formulated hypotheses for our study. We would expect that true environmentally

friendly behavior would lead to a better reputation than would instances of greenwashing. Many studies show that green behavior has positive effects on the attitudes of stakeholders (Aguinis & Glavas, 2012; S. Du et al., 2010; Smith & Langford, 2009; Torres et al., 2012), but the aforementioned studies on the effects of greenwashing show that such positive effects disappear in the case of greenwashing. Macro-level research focusing on the relationship between the environmental behavior and the financial performance of companies suggests similar tendencies (Berrone et al., 2017; X. Du, 2015; Walker & Wan, 2012; Wu & Shen, 2013). We therefore formulated the following two hypotheses:

**Hypothesis 1:** Green organizations generate higher scores on reputation than do organizations guilty of behavioral-claim greenwashing.

**Hypothesis 2:** Organizations that have initiated environmentally friendly behaviors themselves generate higher scores on reputation than do organizations guilty of motive greenwashing.

Considering the differences in environmental consequences between behavioral-claim greenwashing and motive greenwashing, we expected that each type of greenwashing would have a different effect on corporate reputation. Behavioral-claim greenwashing implies that the organization does not (entirely) demonstrate the environmental behaviors it claims whereas motive greenwashing implies that only the organization's reasons behind its behaviors differ from what it communicates. From a consequentialist perspective, truthfulness of green behavior would be more important than truthfulness of motives. Because earlier research shows that people can accept some degree of self-interest in CSR activities as long as they also see intrinsic motives (De Vries, Terwel, Ellemers, & Daamen, 2015), we expected that taking credit for following legal obligations would have less negative effects than would telling lies or half-lies about environmental behaviors. Thus, we developed the following hypothesis:

**Hypothesis 3:** Behavioral-claim greenwashing has a larger negative effect on reputation than does motive greenwashing.

Based on the cognitive dissonance framework, which assumes that even in clear cases of greenwashing (see De Jong et al., 2018; Nyilasy et al., 2014; Parguel et al., 2011), people would still perceive that the green communication at least reflects a company's overall disposition to behave environmentally friendly, we expected no differences between the two

		Behavioral-claim greenwashing		
		Vocal green	Partial greenwashing	Full greenwashing
Motive greenwashing	Own initiative	Truth + Own initiative	Half-lies + Own initiative	Lies + Own initiative
	Taking credit	Truth + Taking credit	Half-lies + Taking credit	Lies + Taking credit

**Figure 1.** Experimental design.

levels of behavioral-claim greenwashing (lies and half-lies). From this perspective, the difference between lies and half-lies is only gradual: Both are not true, and in both cases, the organization might still be perceived to have the aspiration to care for the environment. We thus formulated the following hypothesis:

**Hypothesis 4:** Organizations guilty of partial behavioral-claim greenwashing (telling half-lies) generate similar scores on reputation as do organizations guilty of full behavioral-claim greenwashing (telling lies).

**Method**

To test our hypotheses, we conducted a randomized 3 × 2 online experimental study with two independent variables: behavioral-claim greenwashing and motive greenwashing (see Figure 1). Behavioral-claim greenwashing was operationalized by three different situations: an organization that told the truth, one that told half-lies, and one that told lies about its environmental performance. Motive greenwashing was operationalized by two different situations: an organization that implemented green behaviors on its own initiative and one that took credit for merely complying with legal requirements. The dependent variables were three corporate

reputation constructs: environmental performance, product and service quality, and financial performance. The experiment combined a between-subjects and within-subjects design. Participants answered questions about the company's reputation twice: after reading the company information, including its environmental claims (T1), and after reading a third-party message about the veracity of the environmental information (T2). The research was approved by our university's Ethical Committee.

### **Case: Cruise Industry**

For our experiment, we used the case of a fictional cruise company (G&H Cruises), inspired by an example in Lyon and Maxwell's (2011) study. Lyon and Maxwell described the case of a cruise company included in *Don't Be Fooled: The Ten Worst Greenwashers of 2003*:

Royal Caribbean points to its advanced wastewater treatment systems as a sign of environmental progressiveness, yet they are installed on just 3 of the company's 26 cruise ships. The advanced systems are only found on its Alaskan fleet, which due to Alaskan law are subject to the strictest environmental standards in the industry. Royal Caribbean deems them unnecessary on cruise ships that travel other routes. (p. 8)

In this particular case, an example of both types of greenwashing can be found. The cruise company tells a half-lie (behavioral-claim greenwashing) about wastewater treatments systems, which can only be found on some of its cruise ships, and takes credit (motive greenwashing) for green activities that in fact are required by law. Both types of greenwashing are more ambiguous than outright lies. Telling a half-lie confirms that the organization indeed takes environmental initiatives but does not fully live up to its promises. Taking credit for complying with regulations confirms that the organization behaves in an environmentally friendly way but is not honest about its motives.

Environmental impact is a prominent aspect of CSR within the cruise industry (R. A. Klein, 2011). In its report on the environmental impact of cruise ships, the European Marine Equipment Council (2010) describes seven environmental issues of vessels: gas emissions, ship waste disposal, bilge water (oily water from the engine room), blackwater (sewage water), grey water (from showers, sinks, and laundry), ballast water, and underwater coatings. These issues are constantly monitored and subjected to legal restrictions by organizations such as the International Maritime

Organization. Cruise companies are aware that their impact on the environment is closely observed, and they increasingly commit themselves to implement green solutions.

### ***Experimental Manipulations***

Our experimental materials consisted of two parts. First, participants received company information, which was exactly the same in all conditions. The company information consisted of two corporate Web pages: one about the history of G&H Cruises and one about its environmental initiatives. The latter page describes G&H Cruises' environmental ambitions, highlighting three environmental initiatives: hull coatings (to reduce energy consumption through the use of environmentally safe paint that creates a smoother hull in order to optimize drag force), propulsion and hull design (to reduce energy consumption by optimizing the hull shape and propulsion systems), and advanced wastewater purification (to reduce the emission of polluted water). A screenshot of the environmental initiatives page is shown in Appendix A.

Second, participants received third-party information about the environmental behaviors of G&H Cruises. Participants read a four-paragraph *Nautical News* (a fictional newspaper) article about G&H Cruises (see Appendix B for an example). The first paragraph provides background information about the company and was the same in all conditions. The title and subtitle and the remaining three paragraphs differentiate the six experimental conditions:

- Condition 1 (truth/own initiative): "G&H Cruises nominated for Global Green Awards 2015 for its green initiatives. Recognition for G&H's environmental progressiveness." The article states that G&H Cruises is nominated for an environmental award and explicitly mentions some of the initiatives that were presented on G&H Cruises' Web page.
- Condition 2 (half-lies/own initiative): "G&H Cruises not completely honest about its green initiatives. Doubts about the effectiveness and degree of implementation of green initiative." The article refers to research by the International Maritime Environment Office (IMEO) showing that the hull coating is not effective and that the wastewater purification can only be found on 3 of the 29 vessels.

- Condition 3 (lies/own initiative): “G&H Cruises lies about green initiatives implementation. Cruise company did not upgrade their ships as they claimed.” The article refers to IMEO research showing that nothing happened at G&H Cruises regarding hull coatings and advanced wastewater purification.
- Condition 4 (truth/taking credit): “G&H Cruises claims maritime regulations as own green initiatives. Cruise company included legally required measures in their green initiatives statement.” The article refers to IMEO research showing that G&H Cruises indeed implemented all green initiatives but that these green initiatives merely comply with current maritime legislation.
- Condition 5 (half-lies/taking credit): “G&H Cruises not completely honest about its green initiatives. Cruise company uses partly implemented regulations as own green initiative.” The article refers to IMEO research showing that G&H Cruises’ green initiatives merely comply with current maritime legislation and that the hull coating is not effective and the wastewater purification can only be found on 3 of the 29 vessels.
- Condition 6 (lies/taking credit): “G& H Cruises breaking regulations and lying about green initiatives. Cruise company did not upgrade ships as required by law and claimed regulation as own green initiative.” The article refers to IMEO research showing that G&H Cruises’ green initiatives merely comply with current maritime legislation and that nothing happened at G&H Cruises regarding hull coatings and advanced wastewater purification.

### *Manipulation Check*

We tested the six manipulations in a separate manipulation check. In an online survey, 59 participants were randomly assigned to one of the six conditions. They each read the corporate information about G&H Cruises and one of the six versions of the *Nautical News* article. Afterward, they answered three questions.

One question focused on behavioral-claim greenwashing, asking participants to answer on a 3-point scale the extent to which the company was implementing its environmental claims (from *fully implementing* to *not implementing*). An analysis of variance (ANOVA) revealed a significant difference between the three behavioral-claim greenwashing conditions,  $F(2, 55) = 5.27, p < .001$ , partial  $\eta^2 = .39$ , and a Tukey HSD post hoc test

showed that all three conditions significantly differed from each other in the expected direction ( $p < .05$ ).

Two questions, both using a 5-point Likert-type scale (from *fully disagree* to *fully agree*), focused on motive greenwashing. The first question asked whether the company's environmental initiatives were voluntary actions. The ANOVA for this question showed a significant difference between the two motive greenwashing conditions,  $F(1, 56) = 9.94$ ,  $p < .005$ , partial  $\eta^2 = .15$ , in the expected direction. The second question asked whether the company's environmental initiatives were, in fact, merely complying with maritime legislations. An ANOVA for this question also showed a significant difference between the two motive greenwashing conditions in the expected direction,  $F(1, 56) = 27.19$ ,  $p < .001$ ,  $\eta^2 = .33$ .

### Instrument

To measure participants' reactions to the corporate information and the third-party information, we developed a questionnaire. The original questionnaire consisted of 30 items, with 14 of these items measuring four constructs of corporate reputation (emotional appeal, products and services, social responsibility, and financial performance), based on Fombrun, Gardberg, and Sever's (2000) Corporate Reputation Quotient. The other items included 6 items measuring environmental performance, based on Ralston et al.'s (2015) study, as well as 5 items measuring green brand image and 5 items measuring green brand trust, based on Chen's (2010) study. Participants were asked to answer these questions using a 7-point Likert-type scale.

Two factor analyses of the questions asked at T1 and T2, respectively, showed a considerable overlap between the various scales used in the research, particularly between the items regarding social responsibility, environmental performance, green brand image, and green brand trust. Based on these factor analyses, we decided to eliminate confounding questions, which resulted in three constructs, all fitting within the corporate reputation typology.

The first construct, environmental performance, focused on participants' judgments about the environmental behavior of G&H Cruises. This construct was measured using 6 items (e.g., "G&H Cruises produces the least possible harm to the environment"). The scale had a Cronbach's  $\alpha$  of .82 at T1 and .94 at T2. The second construct, product and service quality, addressed the expected quality of the cruises offered by G&H Cruises. Four items measured this construct (e.g., "G&H Cruises offers high-quality

cruises”). The scale had a Cronbach’s  $\alpha$  of .61 at T1 and .83 at T2. The third construct, financial performance, involved participants’ estimation of G&H Cruises’ business success. This construct was measured using 4 items (e.g., “G&H Cruises looks like a low-risk investment”). The scale had a Cronbach’s  $\alpha$  of .74 at T1 and .80 at T2. All Cronbach’s  $\alpha$ s were sufficient, except the products and service quality construct at T1, which was barely acceptable.

In addition, we measured two constructs at the end of the research to assess the comparability of the experimental groups on key variables. To measure participants’ interest in environmental issues, we adapted a 4-item scale from Bohlen, Schlegelmilch, and Diamantopoulos (1993; e.g., “I do my best to be as environmentally friendly as possible”). The scale had a Cronbach’s  $\alpha$  of .78. To measure participants’ attitude toward cruises, we formulated four semantic differential questions (e.g., “worth considering” vs. “not worth considering” or “interesting” vs. “boring”). This scale had a Cronbach’s  $\alpha$  of .92.

## Procedure

We collected our data via an online Qualtrics questionnaire that was distributed on various social media platforms (Facebook, Twitter, forums). Participants were randomly assigned to one of the six experimental conditions. They were required to answer all questions and could not browse back to previous screens. The first screen informed participants about the purpose of the research. To prevent them from focusing too strongly on environmental performance issues, we framed the research as a study into people’s impressions of companies based on the information presented on their corporate Web site. Participants were asked to read all texts carefully. Then participants were asked to provide basic demographic information (age, gender, and educational level). Next they saw two screens with the corporate information about G&H Cruises: first, the company’s history and second, its environmental initiatives. After reading the materials, participants answered the first set of questions about their impression of G&H Cruises. They were then presented with the third-party information about G&H Cruises’ environmental behavior (the *Nautical News* article). After reading the article, they answered the second set of questions about their impression of G&H Cruises (which was identical to the first set of questions). At the end of the questionnaire, participants answered questions about their interest in environmental issues and their attitude toward cruises.

## **Participants**

Because the participants were recruited via social media platforms, the sample for this study can be characterized as a convenience one. But participants were randomly assigned to the six experimental conditions. A total of 191 participants responded to the questionnaire. After inspecting the time taken to fill out the questionnaire, we excluded 28 participants because the time they took was either too short (less than 5 minutes) or too long (more than 1 hour). The former implied that the participant did not read all texts carefully whereas the latter might mean that the entire session was interrupted by other activities and that the time between reading texts and answering questions was too long. After we inspected the demographic variables, we excluded three additional participants because their educational level deviated too much from that of the overall sample, which ranged from having a medium to high level of education. The remaining 160 participants were all included in the analyses.

The male–female ratio of the participants was almost in balance (47% vs. 53%, respectively). The participants' mean age was 25.7 ( $SD = 8.1$ ), with their ages ranging from 17 to 67 years, which indicates a wide variety of age-groups. The highest percentage of participants had a university degree (66%), followed by a high school diploma (24%) and a higher vocational education diploma (10%).

To verify whether the six experimental groups were comparable, we analyzed the demographic variables of the groups as well as the participants' scores on their interest in environmental issues and their attitude toward cruises.  $\chi^2$  tests showed that there were no significant differences between the groups regarding gender ( $\chi^2 = 9.95, p = .22$ ) and educational level ( $\chi^2 = 10.76, p = .37$ ). An ANOVA showed no differences regarding participants' age,  $F(5, 154) = .83, p = .52$ ; interest in environmental issues,  $F(5, 154) = 1.01, p = .41$ ; and attitude toward cruises,  $F(5, 154) = .30, p = .90$ . We therefore concluded that the six groups were comparable.

## **Results**

We analyzed the data using multivariate repeated-measures ANOVA, with the three corporate reputation constructs measured at T1 and T2 as dependent variables and the three behavioral-claim and two motive greenwashing conditions as independent variables. Our analyses focused on the interactions between the within-subjects and between-subjects variables, which show the extent to which the experimental groups reacted differently to the

**Table 1.** Multivariate Test Results for the Within-Subjects Effect and Its Interactions With Between-Subjects Variables: Which Independent Variables Affect the Combined Dependent Variables?

Independent Variable	Wilks' $\lambda$	<i>F</i>	<i>df</i>	Significance ( <i>p</i> )	$\eta^2$
Effects of third-party information	.471	56.82	3,152	<.001	.53
Interaction with behavioral-claim greenwashing	.722	8.960	6,304	<.001	.15
Interaction with motive greenwashing	.972	1.44	3,152	.24	
Three-way interaction with behavioral-claim and motive greenwashing	.884	3.24	6,304	<.005	.06

third-party information. Since it is not possible to conduct post hoc analyses for the interactions of between- and within-subjects variables, we complemented our overall analysis with similar pairwise, repeated-measures analyses for the three behavioral-claim greenwashing groups.

Table 1 presents the multivariate test results for the within-subjects effect and its interaction with the between-subjects variables. Our first analysis focuses on the question, which independent variables affect the combined dependent variables? First, we found a significant difference between the two moments of measurement. The confrontation with the third-party information appears to have had a substantial negative effect on the participants' views of the company's reputation. More important, we found a significant interaction with behavioral-claim greenwashing, indicating that the participants in the truth, half-lie, and lie condition reacted differently to the third-party information. The partial  $\eta^2$  suggests a substantial and thus practically meaningful difference, meaning that the behavioral-claim greenwashing variable made a difference (which we will further explore in the univariate analyses). No significant interaction effect was found with motive greenwashing, indicating that it generally did not matter for participants whether the green initiatives were self-initiated or merely reflected compliance with legal obligations. Finally, there was a marginally significant but practically meaningful three-way interaction with behavioral-claim greenwashing and motive greenwashing, suggesting that combinations of behavioral-claim and motive greenwashing had different effects on the corporate reputation constructs (which we will also further explore in the univariate analyses). These multivariate results imply that we

**Table 2.** Univariate Test Results for the Within-Subjects Effect and Its Interactions With Between-Subjects Variables: Which Dependent Variables Are Affected by the Independent Variables?

Dependent Variable	<i>F</i>	<i>df</i>	Significance ( <i>p</i> )	$\eta^2$
Effects of third-party information				
Environmental performance	141.18	1,154	<.001	.49
Product and service quality	19.40	1,154	<.001	.11
Financial performance	1.27	1,154	.26	
Interaction with behavioral-claim greenwashing				
Environmental performance	28.55	2,154	<.001	.27
Product and service quality	7.99	2,154	<.005	.09
Financial performance	5.03	2,154	<.01	.06
Three-way interaction with behavioral-claim and motive greenwashing				
Environmental performance	4.64	2,154	<.05	.06
Product and service quality	0.45	2,154	.64	
Financial performance	2.18	2,154	.12	

Note. The analysis is limited to the independent variables with significant multivariate effects.

must examine the univariate test results regarding the interaction with behavioral-claim greenwashing and regarding the three-way interaction with behavioral-claim and motive greenwashing.

Our second analysis focuses on the question: Which dependent variables are affected by the independent variables? Table 2 presents the univariate test results. The effects of the third-party information were limited to two dependent variables: environmental performance and product and service quality. No effects were found on financial performance. The participants' exposure to the third-party information had a large negative effect on their perceptions of the company's environmental behavior and a substantial negative effect on their perceptions of the quality of the products and services offered but no effect on their perceptions of the company's financial performance. We found significant interaction effects with behavioral-claim greenwashing for all three dependent variables, with the largest effects for environmental performance, followed by products and services and financial performance. Thus, the differences between the truth, half-lies, and lies conditions applied to all three dependent variables. Finally, a significant three-way interaction effect with behavioral-claim and motive greenwashing was found only for environmental performance.

**Table 3.** Multivariate Test Results for Pairwise Comparisons of the Within-Subjects Effect and Its Interactions With Between-Subjects Variables: Which Independent Variables Affect the Combined Dependent Variables?

Independent Variable	Wilks' $\lambda$	F	df	Significance (p)	$\eta^2$
<b>Comparison: truth–half-lie</b>					
Effects of third-party information	.538	28.07	3,98	<.001	.46
Interaction with behavioral-claim greenwashing	.660	16.86	3,98	<.001	.34
Interaction with motive greenwashing	.929	2.51	3,98	.06	
Three-way interaction with behavioral-claim and motive greenwashing	.830	6.68	3,98	<.001	.17
<b>Comparison: truth–lie</b>					
Effects of third-party information	.562	25.94	3,100	<.001	.44
Interaction with behavioral-claim greenwashing	.679	15.73	3,100	<.001	.32
Interaction with motive greenwashing	.957	1.51	3,100	.22	
Three-way interaction with behavioral-claim and motive greenwashing	.925	2.71	3,100	<.05	.08
<b>Comparison: half-lie–lie</b>					
Effects of third-party information	.354	63.33	3,104	<.001	.65
Interaction with behavioral-claim greenwashing	.992	0.296	3,104	.83	
Interaction with motive greenwashing	.937	2.35	3,104	.08	
Three-way interaction with behavioral-claim and motive greenwashing	.953	1.70	3,104	.17	

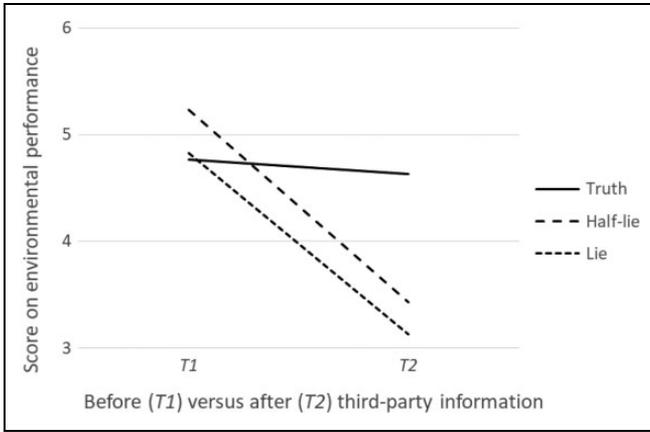
To find out to what extent the three behavioral-claim greenwashing conditions differed, we conducted pairwise, multivariate repeated-measures ANOVAs, focusing solely on the differences between the three behavioral-claim greenwashing conditions and on the three-way interaction with behavioral-claim and motive greenwashing. Table 3 summarizes the multivariate results. The results show significant and practically meaningful differences in the truth–half-lie and truth–lie comparisons but not in the half-lie–lie comparison. Table 4 presents the univariate results associated with these comparisons. It shows that the patterns of the effects on the

**Table 4.** Univariate Test Results for Pairwise Comparisons of the Within-Subjects Effect and Its Interactions With Between-Subjects Variables: Which Dependent Variables Are Affected by the Independent Variables?

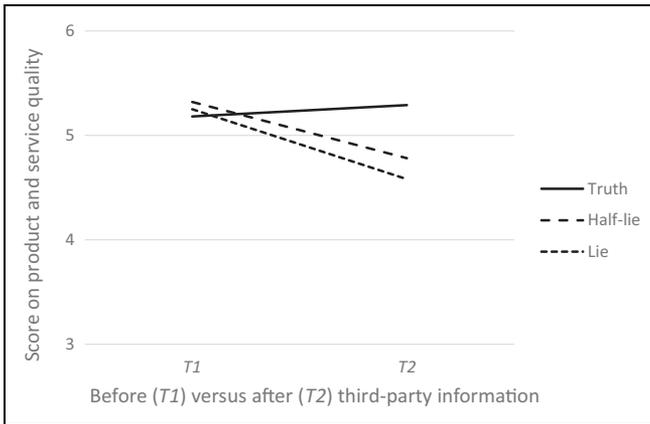
Dependent Variable	<i>F</i>	<i>df</i>	Significance ( <i>p</i> )	$\eta^2$
Comparison: truth–half-lie				
Effects of third-party information				
Environmental performance	67.59	1,100	<.001	.40
Product and service quality	5.33	1,100	<.05	.05
Financial performance	0.00	1,100	.97	
Interaction with behavioral-claim greenwashing				
Environmental performance	49.83	1,100	<.001	.33
Product and service quality	11.68	1,100	<.005	.11
Financial performance	8.88	1,100	<.005	.08
Three-way interaction with behavioral-claim and motive greenwashing				
Environmental performance	8.20	1,100	<.005	.08
Product and service quality	0.99	1,100	.32	
Financial performance	2.55	1,100	.11	
Comparison: truth–lie				
Effects of third-party information				
Environmental performance	65.42	1,102	<.001	.39
Product and service quality	7.72	1,102	<.01	.07
Financial performance	0.00	1,102	.96	
Interaction with behavioral-claim greenwashing				
Environmental performance	47.32	1,102	<.001	.32
Product and service quality	14.51	1,102	<.001	.13
Financial performance	7.76	1,102	<.01	.07
Three-way interaction with behavioral-claim and motive greenwashing				
Environmental performance	7.56	1,102	<.01	.07
Product and service quality	0.52	1,102	.47	
Financial performance	0.21	1,102	.65	
Comparison: half-lie–lie				
Effects of third-party information				
Environmental performance	177.19	1,106	<.001	.63
Product and service quality	30.40	1,106	<.001	.22
Financial performance	6.93	1,106	<.05	.06

Note. The analysis is limited to the independent variables with significant multivariate effects.

corporate reputation constructs were quite similar: with the largest effects on environmental performance, medium effects on product and service quality, and the least effects on financial performance. The results indicate that participants in the truly green condition were significantly more positive about the cruise organization's reputation than were participants in the

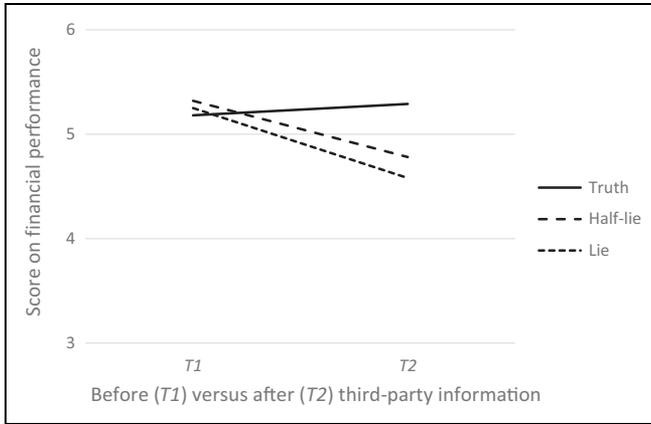


**Figure 2.** Effects of third-party information in the three behavioral-claim greenwashing conditions (truth, half-lie, lie) on environmental performance.



**Figure 3.** Effects of third-party information in the three behavioral-claim greenwashing conditions (truth, half-lie, lie) on product and service quality.

conditions in which the organization told half-lies or lies about its environmental performance. No differences were found between the half-lies and lies conditions. Figures 2–4 show the mean scores on the three corporate reputation constructs for the effects of the third-party information in the three behavioral-claim greenwashing conditions. As all three figures show,



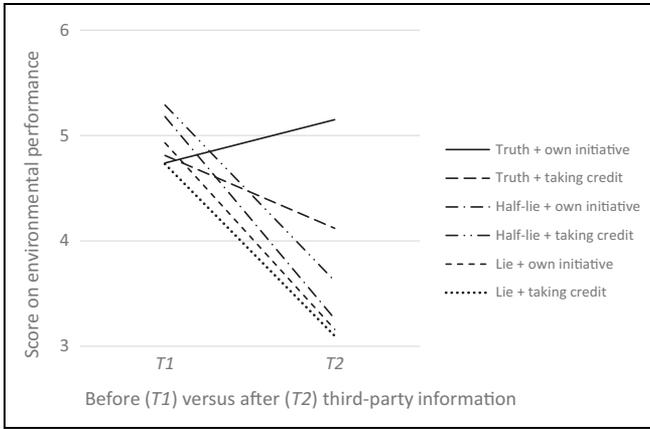
**Figure 4.** Effects of third-party information in the three behavioral-claim greenwashing conditions (truth, half-lie, lie) on financial performance.

the reputation scores clearly went down in the half-lies and lies conditions but not in the truth condition.

A three-way interaction effect with behavioral-claim and motive greenwashing occurred only with environmental performance. In both the truth–half-lie and the truth–lie comparisons, the three-way interactions show that only in the truth condition was there a significant difference between the two motive-greenwashing conditions (own initiative and taking credit). The truthfulness of the organization’s motives was only important if the organization put its environmental claim into practice. When the organization had taken the green initiative itself, its environmental performance score was higher after the third-party information than it was before. When the organization had taken credit for following legal requirements, its score went down (see Figure 5). When comparing the mean scores at T2 in the figure, we can see that in the case of true green behavior, motive greenwashing can make a difference regarding perceptions of environmental performance.

## Discussion

This study is the latest in a series of studies that shed light on the effects of greenwashing, when discovered, on consumers. The most powerful research design for doing so is an experimental one. Earlier studies with



**Figure 5.** Three-way interaction effects between behavioral-claim and motive greenwashing on environmental performance.

experimental designs (De Jong et al., 2018; Nyilasy et al., 2014; Parguel et al., 2011) found that the discovery of greenwashing can have detrimental effects on consumers’ attitudes and behavioral intentions. But these studies invariably exposed participants to obvious and serious cases of greenwashing whereas inventories of greenwashing practices, such as those by TerraChoice (2007, 2009, 2010), indicate that the majority of greenwashing incidents are more ambiguous and less conspicuous. The goal of our study was to find out whether consumers react differently to more ambiguous types of greenwashing than to the clear and blatant ones. Therefore, we distinguished three levels of behavioral-claim greenwashing (truth, half-lies, and lies) as well as a motive-greenwashing condition (in which the organization shows environmentally friendly behavior but is not honest about its motives).

Table 5 provides an overview of our hypotheses and the extent to which our findings confirm them. The first hypothesis, that behavioral-claim greenwashing, when discovered, has detrimental effects on corporate reputation, is supported by our data. Both telling lies and telling half-lies about environmentally friendly behaviors appear to have detrimental effects on all three corporate reputation constructs. This finding is in line with earlier research on the effects of corporate greenwashing on consumers (De Jong et al., 2018; Nyilasy et al., 2014; Parguel et al., 2011). The novelty of our findings is that the negative effects also occur in a less severe and less

**Table 5.** Hypotheses and Results.

Hypothesis	Result
H1 Green organizations generate higher scores on reputation than do organizations guilty of behavioral-claim greenwashing.	Supported
H2 Organizations that have initiated their environmentally friendly behaviors themselves generate higher scores on reputation than do organizations guilty of motive greenwashing.	Partially supported
H3 Behavioral-claim greenwashing has a larger negative effect on corporate reputation than does motive greenwashing.	Supported
H4 Organizations guilty of partial behavioral-claim greenwashing (telling half-lies) generate similar scores on reputation as do organizations guilty of full behavioral-claim greenwashing (telling lies).	Supported

obvious case of greenwashing (the half-lies condition). As we would expect, the effects are strongest on environmental performance, but we also see significant and practically meaningful effects on the perceived quality of the products and services and on perceived financial performance. We suggest that the latter two effects are halo effects: The actual greenwashing is not directly related to product and service quality or financial performance, but participants apparently do assume that environmental behavior or communication integrity is related to the other aspects of corporate reputation. Although not the core of this study, this halo effect is an interesting addition to current insights on the effects of greenwashing on consumers.

The second hypothesis, that motive greenwashing, when discovered, has detrimental effects on corporate reputation, is only partially supported by our data. Only if an organization is not guilty of behavioral-claim greenwashing does it appear to make a difference whether the organization is honest about its motives. If the organization was guilty of behavioral-claim greenwashing (telling lies or half-lies), the motive greenwashing did not add much to the reputational damage. This finding supports earlier studies based on attribution theory (cf. Weiner, 1986) that found that the perceived motives (intrinsic vs. extrinsic) for CSR activities matter (e.g., Barone, Miyazaki, & Taylor, 2000; Gao & Mattila, 2014; Skarmas & Leonidou, 2013). Earlier greenwashing studies by Nyilasy et al. (2014) and Parguel et al. (2011) also assumed that attribution theory helps explain the effects of greenwashing. In addition to supporting the role of attribution theory, however, our findings qualify its applicability: Only when people believe that

the self-reported environmentally friendly behavior is real do perceived motives make a difference.

The third hypothesis, that the negative effects of behavioral-claim greenwashing are larger than those of motive greenwashing, is supported by our data. Our results show significant negative main effects of behavioral-claim greenwashing on all three corporate reputation constructs and no significant main effects of motive greenwashing. But our data also show that the effect of motive greenwashing is considerable when the organization actually puts the promised environmentally friendly behaviors into practice. The results suggest a sequentiality in avoiding the two types of greenwashing. That is, organizations must first make sure that their behavior is completely in accordance with their environmental communication, and then they must ensure that they are completely honest about their motives.

The fourth hypothesis, that there are no differences in effects on corporate reputation between partial and full behavioral-claim greenwashing, is supported by our data. We found no significant differences in perceived reputation between the organization that completely lied about its environmental behaviors and the organization that told half-lies. All patterns of the effects on reputation proved to be exactly the same for both behavioral-claim greenwashing conditions. This finding suggests that people care more about organizations' dishonesty about their environmental policies than about the extent to which their claims and behaviors are misaligned. Thus, partial lies can have the same detrimental effects as do complete lies.

### *Theoretical Implications*

Our findings have several theoretical implications. For instance, insights on the effects of greenwashing based on experimental research using materials exhibiting clear and blatant types of greenwashing seem to be generalizable to a broader range of greenwashing situations. Thus, criticism that the available research on greenwashing only applies to the few cases in which organizations clearly tell outright lies about their environmental behaviors does not seem to be valid. The effects appear to be similar for both lies and half-lies.

Thus, the assumption that organizations should live up to their environmental claims appears to be a principled rather than gradual one. Even though the half-lies condition in fact corresponds with more positive effects on the environment than does the lies condition, it did not make a difference

for the participants in our study. Judgments about greenwashing, therefore, appear to be normative rather than pragmatic. In this light, a half-lie is still considered to be a lie, not a half-truth. Our results, then, seem to support earlier findings that sincerity and credibility have a central role in CSR communication (De Jong & Van der Meer, 2017), suggesting that the only way organizations can benefit from their environmentally friendly behavior is by being completely honest and transparent about it. Compromises should be avoided. Competitive advantage can be reached only by making a substantial and transparent commitment to the environment.

Theoretically, our results support the relevance of cognitive dissonance theory (Festinger, 1957) in understanding the effects of greenwashing and the role of ambiguity in greenwashing cases. The finding that the effects of the half-lies condition did not differ from those of the lies condition might indicate that participants in both conditions resolved the discrepancy between the organization's self-reported environmental behaviors and the third-party information by assuming that, despite the specific criticisms, the organization is still likely to pay attention to the environment. The manifest environmental contributions that were confirmed in the half-lies condition did not add significantly to the dissonance-reduction strategy already used by the participants. This finding confirms that greenwashing nowadays is less obvious than we initially thought it to be (Bowen, 2014; Seele & Gatti, 2017) and that greenwashing does not always represent an organization's strategic and intentional attempts to exaggerate its environmental performance (Chaudhri, 2016; Christensen et al., 2013; Ramus & Montiel, 2005).

In addition, our research demonstrates the halo effect of greenwashing on two corporate reputation constructs: product and service quality and financial performance. Many studies have demonstrated the detrimental effects of greenwashing on perceived environmental performance (e.g., Aji & Sutikno, 2015; Chen & Chang, 2013; Chen et al., 2014; De Jong et al., 2018). And other studies have shown that greenwashing, when discovered, has effects on overall variables such as corporate or brand evaluations or purchase intention (De Jong et al., 2018; Newell et al., 1998; Nyilasy et al., 2014; Parguel et al., 2011). Combining those two insights would suggest that judgments about environmental performance somehow extend to such overall variables. Our research shows that environmental judgments can affect variables that are at first sight unrelated to environmental performance (i.e., perceptions about an organization's product and service quality and financial performance).

### *Limitations and Suggestions for Future Research*

This research, however, does have some limitations. First, it is an experimental study, which has its advantages and disadvantages. The main advantage is that it provides the opportunity to make clear causal inferences in controlled settings. The disadvantages are that it is a contrived, single case; the materials are limited to a few documents; the participants are relatively homogeneous (all relatively highly educated); and participants were urged to read everything with equal attention and in one particular order. Furthermore, our participants were confronted with the third-party information immediately after having read the corporate Web pages—a longer time between the two activities might lead to different results. More experimental research should be done, with variations in the research design, to confirm or modify our findings.

Second, our study is limited by its relatively small sample size (on average, 28 participants per cell). Thus, our research design might be less suitable for detecting differences with smaller effect sizes. This limitation does not apply to the effects of behavioral-claim greenwashing and the interaction between behavioral-claim and motivation greenwashing (observed power 1.0 and 0.93, respectively). But the lack of effects of motive greenwashing might be attributable to our relatively small sample size (observed power 0.38). More research on the influence of motive greenwashing would therefore be useful.

A third, more specific limitation involves the relatively low Cronbach's  $\alpha$  for the product and service quality construct at T1. With a Cronbach's  $\alpha$  of .61, this construct was barely reliable enough to include in the analyses. At T2, the construct consisting of exactly the same questions proved to have a much higher Cronbach's  $\alpha$ . The product and service quality construct, however, behaved in a similar way as did the two other corporate reputation constructs.

Apart from replication studies investigating the effects of behavioral-claim and motive greenwashing in different cases, possibly with different gradations of greenwashing, future research, in our view, should focus on underlying theories. Two theoretical approaches seem particularly relevant. First, studies could further explore the way that people resolve cognitive dissonance when greenwashing comes to light. Although this research could be qualitative (e.g., Lim et al., 2013), there is a high risk of rationalization and social desirability. But if the research would focus more explicitly on interpretation and sense

making, a qualitative approach could be informative. Another fruitful option would involve a series of experimental studies with sequences of specific manipulations to investigate how participants deal with the cognitive dissonance created.

A second theory that future research could explore is the halo effect that we found for greenwashing: that judgments about environmental performance also appear to affect seemingly unrelated corporate reputation constructs. Researchers could further investigate whether such halo effects are consistently found, for instance, by designing more complex experiments in which third-party information about products and services is also given or by conducting experiments in which environmental performance is omitted from the dependent variables to rule out common method bias as a possible explanation (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Future research might also explore the reasoning behind such a halo effect: Why do people change their opinions about products and services or financial performance based on their views on environmental performance? Qualitative research might give initial answers to this question, which could then be tested in experimental research.

## **Conclusion**

For organizations that want to implement environmentally friendly policies and use their green positioning as a reputational asset, the main lesson of this study is that only honest and transparent communication about environmentally friendly behavior pays off. Telling half-lies about green activity does not prove to be significantly better than telling lies about it. Only a truly green positioning can be beneficial. Also, organizations' reputation will not benefit from their environmentally friendly behaviors when they are merely taking credit for complying with legal obligations.

For organizations that try to raise consumers' awareness about greenwashing, the main lesson of this study is that objective accounts of discrepancies between the environmental walk and talk of organizations, despite the size of these discrepancies, will not suffice to raise public awareness and outcry about such malpractices. Accusations of greenwashing should preferably address the organization's intent. Only if consumers are convinced that an organization deliberately lied about its environmental performance can the discovered greenwashing have serious reputational repercussions.

# Appendix A

## Web Page of the Cruise Company's Environmental Initiatives

The screenshot displays the G&H Cruises website with a navigation menu at the top: Home, Cruises, News, About us, and Contact. A large image of a cruise ship is featured below the menu. The main content area is divided into two columns. The left column is titled "Environmental initiatives" and includes a sub-section "Hull Coatings" with a small image of a green hull. The right column is titled "OUR NEWS" and lists three news items with "Read more>>" links. A footer at the bottom contains social media icons, a secondary navigation menu, and a copyright notice for 2015 G&H Cruises.

**G&H Cruises**

Home Cruises News About us Contact

**Environmental initiatives**

Navigators on the world's oceans, we at G&H Cruises know we have a special responsibility to protect our environment. Environmental conservation is not only essential to the cruise experience, it is vital to our business. We therefore have a vested interest in protecting our world's marine and atmospheric resources for present and future generations. The sustainability of our planet is dependent on cleaner seas and purer air. It is important for our guests' experience, and it is our mission to improve and reduce the environmental impact of our company.

In the last 30 years G&H Cruises has made a steady progress in its environmental program and, starting in 2007, we embarked on an ambitious plan to reduce the carbon footprint of our fleet and office locations. Some of our main environmental initiatives involve:

**Hull Coatings**

We have worked with paint manufacturers to develop a better and more environmentally safe alternative for hull coatings. The new products allow us to create a smoother hull and optimize the ships' drag force across the water in order to reduce energy consumption.

**Propulsion and Hull Design**

We have been working with engine and propeller manufacturers to design and develop podded propulsion systems, which are more efficient than traditional propeller-type systems. By bringing together the optimal hull shape with advanced propulsion systems, we have maximized our efficiency.

**Advanced Wastewater Purification**

The Advanced Wastewater Purification (AWP) systems clean the black water (sewage water), grey water (from showers, sinks, laundries) and bilge water (oil water from engine room) generated onboard our ships. The system is already installed on ships from our fleet and it will also be installed on all the ships we will acquire from now on. The AWP system cleans the wastewater generated onboard and creates clean water, which can be safely discharged back into the ocean.

**OUR NEWS**

- New ship included in our fleet  
Read more>>
- Documents for Spring 2016 up to 49%  
Read more>>
- New destination added to our portfolio  
Read more>>
- Our summer contest has a winner!  
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## Appendix B

### The Nautical News Article (Condition 6: Lies/Taking Credit)

The screenshot shows the Nautical News website interface. At the top, there is a contact information bar: "Tel: 0500 561 254, Mail: info@nauticalnews.com". The main header features the "Nautical News" logo and a navigation menu with links for HOME, POLITICAL, ENVIRONMENT, ENTERTAINMENT, and TECHNOLOGY. A search bar is located on the right side of the header.

The main article is titled "G&H Cruises breaking regulations and lying about green initiatives" with a sub-headline: "Cruise company did not upgrade ships as required by law and claimed regulation as own green initiative". The author is "Bill Smith, September 9, 2015". The article includes an image of a cruise ship and text stating: "G&H Cruises is one of the biggest cruise companies in the world with a history of over 40 years in the leisure travel industry. The company's 2,350 available excursions allow travellers to visit 243 different destinations sailing through all major international waters from five continents. G&H Cruises has at this time 18,500 employees and is the most profitable cruise company in the world." It further mentions that G&H Cruises claims to have installed advanced wastewater purification (AWP) systems on their ships, but research by the International Maritime Environment Office (IMEO) shows that these initiatives are nothing more than unimplemented maritime regulations.

On the right side of the main article, there are three smaller article teasers: "Sailing Therapy Program for Veterans Encounters Rough Waters", "Whale-watchers delight", and "Biobazard Beach".

Below the main article, there are four more article teasers arranged in a grid, categorized by "ENVIRONMENT", "TECHNOLOGY", "POLITICS", and "ENTERTAINMENT":

- ENVIRONMENT:** "Encounter With World's Rarest Ocean Mammal Thrills Scientists. Scientists were relieved last week to spot several Vaquitas porpoises in the wild after their population had declined 42 percent in a single year."
- TECHNOLOGY:** "Michigan Police Upgrades Deepwater Capability. The Michigan State Police Underwater Recovery Unit recently took delivery of an Evox-500 Autonomous Underwater Vehicle (AUV) from OceanServer Technology."
- POLITICS:** "Law bans use of whales and dolphins as entertainment. The theme park industry sent a team to Olympia Thursday to fight a bill protecting our state's marine mammals."
- ENTERTAINMENT:** "Children can play 'pirates' with Jack Sparrow. The Maritime Center is organizing a charitable event where children can play on a sailing ship with an actor impersonating Jack Sparrow, the main character from 'Pirates of the Caribbean'."

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