How Downplaying Product Greenness Affects Performance Evaluations: Examining the Effects of Implicit and Explicit Green Signals in Advertising

Abstract

Despite frequent reports that they favor products with environmental benefits, consumers often purchase conventional alternatives. One reason for this is the performance liability associated with green products, in which consumers perceive them as being less effective. This research examines the concept of "green understatement" (i.e., communication of implicit green signals) compared with "green emphasis" (i.e., communication of explicit green signals) in green product advertising as a strategy to enhance performance evaluations. We test whether, why, and when an implicit (vs. explicit) advertising strategy leads to higher performance evaluation for green products. We suggest and show that implicit green signals are more effective in conditions under which consumers have more concerns about the product's performance or have lower expectations about its greenness. More specifically, the results of two experimental studies show that implicit (vs. explicit) communication about greenness leads to higher performance evaluations for products that are less commonly green (Study 1) and for products that have an optional green mode (Study 2). The findings aid in the understanding of how a green product advertising strategy may influence performance evaluations and provide managerial implications for green product promotion.

Keywords: Green advertising, Performance evaluations, Message–benefit congruity, Optionality

An environmental movement is underway in today's market. According to FTSE Russel (2018), the green market could represent 10% of the global market value by 2030, given the overall increase in green product development and the unprecedented number of products now available to consumers (Mazar and Zhong 2010). For example, in the automotive sector, brands have launched both hybrid and electric vehicles that compete with conventional alternatives in the market. Compared with conventional products, green products routinely feature environmentally friendly attributes that are less harmful to the planet and humankind, such as biodegradable and nontoxic ingredients, attributes that enhance energy efficiency, and recycled components. While prior research and surveys have uncovered a vast and growing group of consumers who state their willingness to buy environmentally friendly products, such attitudes rarely result in product purchase (Auger et al. 2003; Janssen and Vanhamme 2015). One driving factor for the reluctance to buy green products is the green product performance liability (e.g., Lin and Chang 2012; Luchs et al. 2010), in which consumers perceive green products as less effective than their conventional counterparts, suggesting that consumers often infer a trade-off between environmentalism and other product attributes (Lin and Chang 2012; Luchs et al. 2010).

Given consumers' perceptions of poorly performing green products, persuading them to alter their consumption habits remains a formidable task for marketers. Thus, it is not surprising that firms are attempting various advertising strategies to induce consumers to buy green. The most prominent advertising strategy includes products' environmental characteristics. For example, Toyota makes the Prius's low emissions and fuel consumption prominent, clearly stating that the product has environmental benefits. By contrast, Tesla and BMW reduce the prominence of such information, focusing instead on products' performance-related characteristics (e.g., acceleration time, handling ability).

These examples represent two distinct advertising strategies—namely, green emphasis and understatement. The former strategy aims to make products' green characteristics clear, employing what we term as "explicit signals." The latter strategy reduces this prominence; we call this approach "implicit signals." Some studies in the field of advertising have documented the importance of advertisement execution as a predictor of consumer attitudes (e.g., Kronrod, Grinstein, and Wathieu 2012), while other studies have attempted to categorize green advertising appeals by their specificity (e.g., Banerjee, Gulas, and Iyer 1995). However, although many consumers may prefer an explicit appeal, few actually alter their consumption behavior. Indeed, within the context of trade-offs involving product sustainability and functional performance, prior research provides evidence that consumers tend to choose products with superior functional performance over products with superior sustainability characteristics (Luchs, Bower, and Chitturi 2012) and indicates that this choice is often related to lay inferences about the performance ability of green products (Newman, Gorlin, and Dhar 2014). However, firms continue to invest in new environmental technology. For example, Ford Motor Company is a leading player among global automakers in overall investment in batteries and electric cars, which now totals approximately $90 billion and is still growing (Lienert 2018). Given this substantial investment in green technology, firms face a dilemma between choosing to emphasize information related to new green attributes or downplaying it in favor of conventional product attribute characteristics. Against this backdrop, the following question has both theoretically and managerial importance: Should firms primarily focus on green product characteristics (i.e., explicit green advertising strategy) or on other product aspects with only implicit green statements (i.e., implicit green advertising strategy)?

All else being equal, it would be logical for firms to communicate their newly developed green attributes to consumers. However, such a strategy may backfire, as

consumers often perceive green products as performing worse than their conventional counterparts. Given such inferences, we posit that when consumers are more concerned about the performance of a green product or have less expectations of its greenness, an implicit (vs. explicit) advertising strategy might be more successful.

Specifically, we examine two conditions that may either lower greenness expectations of or increase performance concerns with a green product and therefore moderate the effectiveness of an implicit (vs. explicit) green advertising strategy. First, we suggest that green advertising strategy effectiveness is contingent on whether consumers perceive the product as typically green in the market, a concept referred to as green product typicality. When a product is marketed as green in a conventionally non-green product category, performance concerns among consumers should be higher (expectations of product greenness should be lower), and therefore an implicit advertising strategy will be more effective. Second, building on the concept of sustainability liability and performance concerns, we explore the role of greenness optionality. We posit that when a green product has an optional green mode, consumers' performance concerns should be higher (expectations of product greenness should be lower), and therefore an implicit advertising strategy will be more effective. Recent research indicates that innovations can differ in the locus of the product system in which they are incorporated. Specifically, such components can be central to the product or peripheral (Gatignon et al. 2002). Extending prior research in the field of innovation (e.g., Ma, Gill, and Jiang 2015) and choice architecture (e.g., Theotokis and Manganari 2015), we examine the role of optional green attributes, which are product attributes that add additional benefits to the product but are not central to its functioning. Though optional, the green component is still an important feature, integrated into the overall core product (Ma, Gill, and Jiang 2015) and could ultimately impact on its perceived performance when activated by the user. Beyond the theoretical value of providing insights

into the role of advertising in defining consumers' green product evaluations, our research also offers guidance to marketing managers and advertising professionals as they choose among various advertising strategies for newly developed green products.

Next, we draw on relevant literature to derive our basic predictions about the effect of message appeal types on consumers' performance evaluations of environmental products. We then present two experimental studies that test these predictions using a diversity of sustainable products and message appeals. The study concludes with a discussion of the theoretical and practical implications of our findings.

Theoretical Background

Green Product Advertising

In the market, a multitude of green products are available, ranging from low-cost household cleaners and light bulbs to more expensive electric vehicles. Compared with conventional products, green products offer a wide range of benefits to users, including environmental protection, reduced water and energy use, and nontoxic ingredients (Auger et al. 2008). Indeed, household items, such as tissue paper, cosmetics or varnishes were shown to have the highest level of eco-certification by the European Union Ecolabel, while products such as household cleaners (e.g. surface cleaners, hand washing and laundry detergents, etc.), were also shown to represent a significant portion of certifications (EU Ecolabel, 2019). Additionally, certain electronics are being heavily promoted based on their green aspects, such as material or resource consumption. To promote such products to consumers, prior research in the area of green product marketing (e.g., Newman, Gorlin, and Dhar 2014; Schuhwerk and Lefkoff-Hagius 1995) and, more broadly, prosocial behavior (White and Peloza 2009) suggests that marketers can employ different advertising strategies to encourage consumers to purchase.

Firms can employ a range of methods and strategies to push consumers toward greener products. One of the most common approaches is green advertising, whereby product or service messages highlight enhanced environmental benefits over traditional alternatives. However, the extent to which such information is communicated can vary, and little is known about how consumers perceive advertisements that differ in terms of environmental characteristic prominence. Signals in advertisements can act as cues for consumers. Thus, when seeking to create overt meaning, such as making it known that a product has green characteristics, firms can use explicit signals (Okazaki, Mueller and Taylor, 2010). In this research, we define explicit green product communication strategy as an approach that aims to make prominent the product's environmental characteristics (Kanouse, 1984) and in doing so, makes a direct connection between the product and the environment (Banerjee, et al. 1995). For example, an advertisement could feature a prominent eco-label or explicitly stated green information (e.g., carbon emissions). Such marks or statements help to assure consumers about the environmental qualities of the product (Atkinson and Rosenthal 2014). However, firms wishing to downplay such claims may communicate this information implicitly. Extending past advertising literature, we define implicit green product advertising strategy as an appeal whereby the green characteristics of the product are placed in a less prominent location and thus, they play a passive role in the message visuals (e.g. Chang and Yen, 2013; McQuarrie and Phillips, 2005; Okazaki, et al. 2010). Such messages are often indirect or subtle in their mention of select product attributes, which should result in consumers relying less on the implicit information, while focusing more on the salient explicit cues. While a plethora of research exists in the area of green advertising, including eco-labels (Atkinson and Rosenthal 2014), message assertiveness (Kronrod, Grinstein, and Wathieu 2012), green claim quantity (Olsen, Slotegraaf, and Chandukala 2014), and green demarketing (Reich and Soule 2016), the topic of information prominence remains at large.

Although most studies in the field have focused on explicit communications, research has shown that the attributes consumers may recall in a given advertisement can vary greatly and that their prominence in a given appeal may influence such recall (Gardner 1983). Prior research indicates that consumers often rely on lay theories in forming inferences (Broniarczyk and Alba 1994; Sujan and Dekleva 1987). For example, Chandon and Wansink (2007) find that consumers use health claims to infer the calorie content of fast food and given that healthful food is often associated with lower calorie content, consumers often underestimate the combined calories of healthful and unhealthful options. In addition, Newman, Gorlin, and Dhar (2014) show that consumers often use lay theories regarding resource allocation, believing that to be superior in one area, a firm must sacrifice in another. In summary, these studies are consistent with the strategy of compensatory inferences (Chernev and Carpenter 2001). That is, in efficient markets, consumers expect that product alternatives within a category offer comparable levels of benefits (i.e., value-parity beliefs); therefore, they adopt compensatory inferences, reasoning that the dominant option has certain disadvantages on the unobservable attributes.

In this research, we posit that by employing explicit green signals, firms may intentionally or unintentionally lead consumers to infer that the product features prominent environmental attributes and, as such, would share similar attributes and characteristics to other green products. However, this may have negative downstream consequences, due to the sustainability liability (Luchs et al. 2010). By contrast, an implicit signals approach will downplay the product's green attributes, allowing more conventional attributes to be the focus of the appeal. These two strategies will likely have an impact on how consumers perceive the product's performance ability. However, the extent of their affect may be determined by the product selected or even the extent to which they are incorporated into the product system.

Hypotheses Development

We suggest two boundary conditions under which the type of green advertising strategy employed (i.e., explicit/emphasis vs. implicit/understatement) will result in varying performance evaluations: green product typicality and green optionality. As we subsequently show, both conditions can lower greenness expectations of or increase performance concerns with a green product and therefore moderate the effectiveness of implicit (vs. explicit) green advertising strategy.

Loken and Ward (1990) define "typicality" as the extent to which a product is perceived to represent a category. Extending this definition, we identify green product typicality as the degree to which a product is viewed as representing a product category holding greenness characteristics. Previous research has established that consumers often evaluate products according to the perceived benefits offered (Chandon, Wansink, and Laurent 2000), which are often determined on the basis of previously held product category expectations (Kean and Albada 2003). Products that offer benefits often associated with the given category are congruent, while products that offer new or novel attributes that are not aligned with the chosen category are incongruent. Indeed, in their advertisements, brands often aim to match the content with consumers' perceptions (Keller 1993).

Another way to alter consumer perceptions is through green optionality, defined as an green attribute, or mode, that provides additional benefits to a product but is not required for its overall functioning (Ma, Gill, and Jiang 2015). Products comprise various subsystems and modules, some of which are core (i.e., tightly coupled with other subsystems) and some of which are peripheral (i.e., weakly coupled with other subsystems) (e.g., Gatignon et al. 2002). Building on the notion of peripheral attributes, we examine the role of green optionality, with the consideration that whether or not a product's green mode is optional, or core affects performance concerns and therefore might affect the role of implicit (vs. explicit) green

signals. Thus, similar to green product typicality, green optionality has the potential to alter the extent to which consumers consider a product green and, in turn, vary the impact of green product advertising strategy.

Moderating Role of Green Product Typicality

Consumers may hold distinct perceptions of products developed as environmentally friendly. Typically, such perceptions are based on past experiences or lay inferences, as green products exist in a wide variety of categories, including consumer electronics, automobiles, household applications, and cleaning products. For example, Luchs et al. (2010) find that consumers hold varying associations between ethicality and perceptions of strength and weakness.

Such literature is particularly relevant for the current research. First, it reveals that consumers tend to draw inferences about a product based on a single category, even when that product may belong to two or more different categories (Newman, et al. 2014). Second, if a product contains elements that make it difficult to categorize, consumers will make a trade-off to achieve single category inference (Pancer, McShane, and Noseworthy 2017). Research has shown that previously held mental representations help consumers define a given category to evaluate a given object (Gershoff and Frels 2015). Through this process, consumers can subjectively identify what an object is and determine the extent to which it is congruent with or incongruent from other objects (Alba and Hutchinson 1987; Cohen and Basu 1987; Rosch and Mervis 1975), with congruity resulting in more favorable outcomes than incongruity (e.g., Aggarwal and McGill 2007; Meyers-Levy and Tybout 1989). Thus, incongruity may result when a firm develops an environmental attribute assigned to a product belonging to a conventionally nongreen product category, as consumers will have difficulty in categorizing the product. Such a result may degrade overall product evaluations. For example, Chandon, Wansink, and Laurent (2000) report that the effectiveness of sales

promotions often depends on the congruity between the promotion and product category benefits. Thus, we posit that incongruity between the message and the perceived product benefits will have negative consequences, particularly because of consumers' previously held beliefs about green attributes. This is due to consumer lay inferences about firm resources. Specifically, when a company develops a new green attribute for a given product, consumers might assume that to make the product more environmentally friendly, the company needed to take resources away from more conventional attribute development (Newman, Gorlin, and Dhar 2010). Moreover, green attributes launched in a conventionally nongreen category may bring additional performance risk, as the attribute is relatively unknown to consumers. By contrast, launching a new green attribute in a product category that is traditionally considered green reduces such risk, as consumers already hold greenness expectations. In other words, greenness and performance are already established for green products in a perceived typically green category. Thus, we posit the following:

> **H1:** Green product typicality will moderate the effect of green advertising strategy on performance evaluations. Specifically, green understatement (i.e., implicit green signals) will lead to higher performance evaluations for products less commonly green (i.e., atypical green products), while green emphasis (i.e., explicit green signals) will lead to higher performance evaluations for products more commonly green (i.e., typical green products).

Moderating Role of Green Optionality

Traditional green marketing and advertising research has often focused on core product attributes (e.g. Luchs, et al. 2010; Newman, et al. 2014), in which the attribute is linked to the core product and is an integral part of the product's functioning (e.g., electrically powered vehicles, household cleaners featuring environmental ingredients). However, researchers have also highlighted the role of peripheral attributes, which unlike core

attributers, are designed to be weakly coupled to other product subsystems (Gatignon, et al. 2002). Extending this definition, Ma, et al (2015) introduce the concept of optionality, which relates to peripheral components that are designed to enhance the benefits and are not required for the functioning of the base product. For instance, in the automotive sector, numerous car makers are adopting the concept of optionality via the employment of eco-modes. The term "Eco Mode" stands for the economical mode in the car. It is designed to reduce fuel consumption and carbon emissions by limiting a vehicle's performance ability. However, when not activated, it is not required for the car to function. Thus, optional attributes may represent a form of an "opt-in" policy, in which the consumer may choose the option, but this choice is not automatically assumed (Theotokis and Manganari 2015).

Considering this argumentation, optionality could potentially allow firms to develop new and expensive green attributes, while overcoming potential negative side effects. However, its potential effect may be dependent on the green advertising strategy. When paired with an explicit advertising strategy, optionality may decrease performance evaluations. An optional green attribute may not lead consumers to view the product as typically green and this greenness as not an integrated attribute. In other words, an optional green attribute is likely to generate skepticism about the performance of a product. Thus, we propose that when a product has an optional (vs. a core) green attribute, an implicit green advertising approach may enhance performance evaluations. Conversely, for a nonoptional green attribute, explicit advertising may be better able to enhance performance evaluations. When the product features a core green attribute, it is likely to operate in a similar manner to that of typically green products. Therefore, we hypothesize the following:

> **H2:** Green optionality will moderate the effect of green advertising strategy on performance evaluations. Specifically, green understatement (i.e., implicit green signals) will lead to higher performance evaluations for products that have an optional

green mode, while green emphasis (i.e., explicit green signals) will lead to higher performance evaluations for products that have a nonoptional green mode.

Overview of Studies

To examine our hypotheses, we undertook two experimental studies that examine the role of different types of advertising appeals (explicit vs. implicit green signals) in influencing performance evaluations. In Study 1, we examine the role of green advertising strategy and consumers perceptions of green product typicality, specifically the extent to which consumers perceive a given product category as holding green characteristics. In Study 2, we introduce the concept of green optionality and examine its role in influencing the relationship between green advertising strategy and performance evaluations. Moreover, we include a measure for purchase intent in both studies, while including greenness evaluations in Study 2 to determine whether our green product advertising strategy and the chosen boundary conditions have an impact on the extent to which consumers view the product as green. Each study uses a fictitious brand, to ensure that the results are not driven by prior brand knowledge.

Study 1

In Study 1, we aimed to examine the role of a green product advertising strategy in performance evaluations using product benefits in an advertisement. Moreover, we assess the boundary condition of green product typicality. To motivate consumer behavior, firms may vary the extent to which environmental information is prominent in a green product advertisement. One strategy is to use explicit signals, which highlight the product's environmental benefits. By contrast, implicit signals reduce this prominence, focusing on conventional product elements. However, these approaches may have different degrees of impact on performance evaluations depending on the product and its associated category. We refer to this as green product typicality, or how typical green products are in a given category.

Method

We recruited 253 U.S. respondents from Amazon Mechanical Turk (MTurk) (43.5% female) and randomly assigned them to one of four conditions in a 2 (implicit vs. explicit green signals) × 2 (typical vs. atypical product) between-subjects experiment. To manipulate green product advertising strategy, we developed an advertisement for a new laundry detergent. In each condition, we held constant the text content of the advertisement, which stated that the laundry detergent was "made using ingredients to ensure a great cleaning experience." A photograph of a generic white laundry detergent bottle appeared on the right-hand side of the advertisement. To manipulate a green product advertising strategy, we selected an eco-label that stated that the product was sustainable and 100% eco-friendly. To manipulate explicit green signals, this eco-label appeared below the main text and was enlarged to fit the area, making it prominent in the advertisement. For implicit signals, the eco-label appeared at the bottom of the appeal and was small in size, thus reducing emphasis on the product's environmental characteristics.

To manipulate green product typicality, we conducted a pretest to identify a product category that consumers perceive as neither typically green nor atypically green. This way, we would be able to manipulate typicality more realistically and effectively by focusing on a single product category. We pretested eight product categories of both low- and high-involvement goods, including a television, car, washing machine, laundry detergent, household cleaner, dishwasher, toilet paper, and a kettle. We collected data from 135 U.S. respondents on MTurk with a within-subject design, in which respondents were asked to rate the extent to which the product belonged to a green product category on a selection of measures (e.g., "How common are green products in this product category?"). Moreover, we measured typicality on a two-item 7-point bipolar scale anchored by atypical/typical and unusual/usual (e.g. Campbell and Goodstein 2001; Ma, et al. 2015).

The results of the within-subject pairwise t-test indicated that the respondents perceived both laundry detergent (M_{common} = 3.52, $M_{typicality}$ = 4.50) and the washing machine (M_{common} = 4.15, $M_{typicality}$ = 3.83) as neither green nor nongreen, with a score near the midpoint of 4 for both the measure of green commonness and typicality, allowing us to manipulate the extent to which each product category has green associations. In this study, we selected laundry detergent, while in Study 2, we used the washing machine. Then, to manipulate green product typicality, we presented respondents with a series of statements. In the atypical group, respondents read, "Green products are not common within the detergent product category. In fact, recent industry reports suggest that less than 10% of the sector's manufacturers offer a green product." In the typical group, respondents read, "Green products are common within the detergent product category. In fact, recent industry reports suggest that more than 50% of the sector's manufacturers offer a green product" (see Appendix A).

To measure performance evaluations, we employed a two-item 7-point Likert scale (i.e., "How would you rate the performance ability of the product discussed in the industry reports?" and "How would you rate the quality of the product discussed in the industry reports?"), which proved to be reliable (Pearson Correlation .709; Newman, Gorlin, and Dhar 2014). We then measured purchase intent with a one-item bipolar scale (e.g., "Please rate your purchase intent for the product discussed in the industry reports"; Newman, Gorlin, and Dhar 2014). We believe a one-item scale to be suitable as respondents are generally familiar with the construct of purchase intent (Drolet and Morrison, 2001). In addition, we included an environmental consciousness scale (α = 0.93) (Kilbourne and Pickett 2008) as a control variable to ensure that the impact of green advertising strategy on performance evaluations was driven by the manipulations rather than respondents' level of environmental concern.

Results

To ensure our manipulations had the desired effect, we conducted a pre-test (N = 100). Each respondent was shown one of the two green product advertisements and asked to rate the extent to which the green information was displayed in an explicit or implicit manner. To measure this, we employed scales developed by Okazaki, Mueller and Taylor (2010) that measures the extent to which information in a given advertisement is implicit (i.e. subtle, indirect, implicit and imprecise) or explicit (i.e. explicit, direct, assertive and precise) on a 1-7 bipolar scale.

Indeed, we find that our manipulations did have the desired effect on both the explicit ($F(1, 99) = 43.944$, $p < .001$) and implicit ($F(1, 99) = 20.371$, $p < .001$) measures. We also measured green product typicality as a manipulation check with a two-item 7-point bipolar scale anchored by atypical/typical and unusual/usual (e.g. Campbell and Goodstein 2001; Jiang, et al. 2012). The results were significant and had the correct effect ($F(1, 251) = 16.186$, $p < .001$). We also examined the control variables of environmental consciousness and product familiarity. The results indicated that respondents were familiar with the product in all each of the four conditions ($F(3, 249) = 1.518$, $p = .219$). In addition, we found no significant difference between conditions on environmental consciousness ($F(3, 249) = 1.086$, $p = .298$). Based on the results, we can proceed with the main experiment.

To determine the impact of message–benefit congruity on our dependent variables, we conducted two analyses of covariance (ANCOVAs) with green product advertising strategy as the independent variable and green product typicality as the moderator. We added environmental consciousness as a covariate in both tests. As predicted, we found a significant interaction effect ($F(4, 248) = 5.505$, $p < .05$) of green advertising strategy and product typicality on purchase intent (see Figure 1). Specifically, when the product was typical to the green product category, explicit signals had a more positive impact than implicit signals.

However, when the product was atypical, implicit signals enhanced purchase intent more than explicit signals. Follow-up analysis showed that when the product belonged to a category in which green associations exist, there was a significant difference ($t = 3.201$, $p < .05$) between the explicit ($M = 4.91$) and implicit ($M = 4.15$) signals condition. When the product was atypical, there was no significant difference ($t = –.270$, $p = .788$).

Next, we ran an ANCOVA with performance evaluations as the dependent variable. We found a significant interaction ($F(4, 248) = 5.476$, $p < .05$); for the typical product, explicit signals enhanced performance evaluations, while for the atypical product, implicit signals led to an increase in performance evaluations (see Figure 2). Follow-up analysis showed that when the product was typical, there was a significant difference ($t = 1.835$, $p < .10$) between the explicit ($M = 5.42$) and implicit ($M = 5.08$) green signals conditions. When the product was atypical, we found a moderately significant difference ($t = –1.757$ $p < .10$) between the explicit ($M = 5.05$) and implicit ($M = 5.36$) conditions. These results provide support for H1.

Finally, to test the specific predicted pathway, we employed a moderated mediation test. We coded implicit green signals as 1 and explicit green signals as 2 to examine the proposed model, with performance evaluations as the mediator and purchase intent as the dependent variable. Using Process Model 8 (Preacher and Hayes 2008), we conducted a bootstrap test with 5,000 samples that indicated a full moderated mediation model, with a 95% confidence interval (CI) excluding zero (CI = .0691 to .6204). We found that the direct effect of a green product advertising strategy on purchase intent, after accounting for the path through performance evaluations, was significant for the high performance criticality condition (CI = –1.0482 to –.1571). However, when performance criticality was low, we found no significant effect (CI = –.5130 to .3518).

Discussion

The results of Study 1 confirm our initial hypothesis that congruity between the advertising appeal and consumers' previously held product category assumptions can have a strong impact on performance evaluations. Specifically, in contrast with prior studies (e.g., Newman, Gorlin, and Dhar 2014), we show that when consumers perceive a product as belonging to a category commonly associated with greenness, explicit signals enhance performance evaluations. However, for products in product categories that are not typically green, consumers prefer implicit signals. Thus, we find support for H1, in that perceived typicality moderates the effect of green product advertising strategy on performance evaluations. Moreover, we demonstrate that performance evaluations influence purchase intent. Finally, to ensure the validity of our results, we reran our analysis with a random sample of 75% of the total sample (N = 184). Results for the randomly generated subsample were qualitatively consistent, showing similar significance levels for the two-way ANCOVA and the moderated mediation test. More specifically, for the interaction effect between green product advertising strategy and typicality, we found significant effects for purchase intent ($F(3, 183)$ 1.807, $p < .05$) and for performance evaluations ($F(3, 183)$ 4.327, $p < .05$). Additionally, we also find that the moderated mediation model remains significant.

Study 2

In Study 2, we aim to introduce a new product design concept—optionality—to understand the conditions under which explicit or implicit green advertising strategies positively affect performance evaluations. While optionality results in a green attribute that is not required for the product to function, it is an innovation that is attached to the product subsystems and represents incongruity, as a peripheral attribute may signal to consumers that the product is not actually green. Thus, in this study, we test green attribute optionality as a

boundary condition on the relationship between green product advertising strategy and performance evaluations.

Method

We sampled 170 U.S. respondents from MTurk (46.3% female) and randomly assigned them to one of four conditions in a 2 (implicit vs. explicit green signals) × 2 (optional vs. nonoptional green attribute) between-subjects experiment. To manipulate green product advertising strategy, we employed a similar operationalization to that of Study 1, specifically making either environmental-related (explicit green signals condition) or nonenvironmental-related (implicit green signals condition) attributes more prominent. Respondents saw an advertisement for a washing machine that featured a new eco-mode. The eco-mode, which is common in washing machines, reduces power and water usage. In the explicit green signals condition, a headline and subheading appeared at the top of the advertisement featuring a description of the eco-mode. At the bottom of the advertisement, in a reduced font size, was a headline and subheading that detailed the product's nonenvironmental attributes, including a description of a new drum designed to protect clothes while offering a powerful washing capability. In the implicit green signals condition, the placement and prominence of the information appeared in reverse order, to downplay the product's environmental aspects. To manipulate optionality, we placed an asterisk alongside the eco-mode description in the optional condition. Located at the bottom of the advertisement was a statement indicating that the eco-mode was user-activated. In the nonoptional condition, no information was given, and the asterisk was removed. The washing machine selected was generic, and all brand cues were erased (see Appendix B).

The structure and content of the questionnaire were similar to those in Study 1. In addition, this experiment included an instructional manipulation check (Goodman and Irmak 2013; Oppenheimer, Meyvis, and Davidenko 2009). Using the same scales as in Study 1, we

measured performance evaluations (α = .92), purchase intent (α = .95), and the control variable of environmental consciousness (α = .91). We also measured familiarity with the product mentioned using a two-item 7-point bipolar scale (not at all familiar/extremely familiar, know very little/know a lot; α = .87).

Results

Before proceeding with the main experiment, we conducted a pre-test (N = 100) to ensure the manipulations had the desired effect on both perceptions of explicitness and implicitness, and on optionality. As in Study 1, we used the same measure for explicitness and implicitness (Okazaki, Mueller and Taylor, 2010). To assess whether respondents viewed the product's green attribute as optional, we included a single item bipolar scale (1 = nonoptional; 2 = optional). The results indicated the desired effect for both the explicit (F (1, 99) = 8.229, p < .05) and the implicit (F (1, 99) = 10.368), p < .01) measures. We also find a significant effect for optionality (F (1, 99) = 63.794, p < .001). In addition, we find that there are no significant differences between the interaction terms on environmental consciousness (F (3, 166) = 1.792, p = .183) and product familiarity (F (3, 166) = 1.354, p = .246). Based on the results, we can proceed with the main experiment.

Thus, to examine the moderating effect of attribute optionality on the relationship between green product advertising strategy and both performance evaluations and purchase intent, we conducted a two-way ANCOVA with environmental consciousness and familiarity with the environmental attribute as covariates. The green product advertising strategy served as the independent variable, with optionality as the moderator. We found a significant interaction for performance evaluations (F (3, 166) = 10.009, p < .05; see Figure 3) in support of H2. We also found a direct relationship for purchase intent (F (3, 166) = 4.970, p < .05; see Figure 4). Follow-up analysis on performance evaluations indicated that when the environmental attribute was not optional, there was a significant difference (t = 2.312, p <

.05) between the explicit (M = 5.97) and implicit (M = 5.49) green signals conditions. However, there was no significant difference (t = –.543, p = .589) for purchase intent. When an environmental attribute was optional, there was also a significant difference (t = 2.578, p < .05) between the explicit (M = 5.47) and implicit (M = 6.02) green signals conditions. For purchase intent, the results are similar; there was a significant difference (t = 3.292, p < .05) between the explicit (M = 4.61) and implicit (M = 5.37) signals conditions.

Finally, we conducted a moderated mediation. As in Study 1, we coded implicit green signals as 1 and explicit green signals as 2 to examine the proposed model. Using Process Model 8 (Preacher and Hayes 2008), we conducted a bootstrap test with 5,000 samples that indicated a full moderated mediation model, with a 95% CI excluding zero (CI = –1.3461 to –.3345). We found that the direct effect of a green product advertising strategy on performance evaluations, after accounting for the path through autonomous motivation, was significant for the high (95% CI = –.7894 to –.1268) optional condition. When the attribute was not optional, we also found a significant effect (95% CI = .0724 to .7637).

Discussion

As in Study 1, we found that congruity between the message content and the product can have a significant impact on consumers' perceptions of performance and intent to purchase the green product. As typicality did in Study 1, optionality served as a signal to consumers of the extent to which the product belonged to a green category. When the attribute was optional, respondents preferred implicit signals. This is due to the consumer belief that an optional attribute does not affect the core product, as it is not required for its functioning, and as such, the product is not placed in the green category. Thus, the message content aligns with the product. However, when the attribute was nonoptional, explicit signals enhanced the dependent variables. In addition, we found that while a green product advertising strategy may influence performance evaluations, it does not alter perceptions of

product greenness. In this case, consumers continue to view the product as green, while the implicit signals advertising strategy acts as reassurance that the product can meet their performance expectations. Thus, we find support for H2.

General Discussion

At first glance, it would seem fruitful for firms to communicate the central aspect of a newly developed product. In the case of a green product, academic research has focused on environmental attributes in communication appeals to measure consumer evaluations and purchase intent (e.g., Gershoff and Frels 2015; Luchs et al. 2010; Newman, Gorlin, and Dhar 2014). However, the green product category offers a clear example of how a potential asset may become a liability if firms fail to develop suitable advertisements that appeal to consumers.

Building on this idea, we investigate the role of a green product advertising strategy, specifically the impact of explicit and implicit signals in a green product advertisement. In addition, we posit that the effect of a green product advertising strategy on consumer evaluations and purchase intent is dependent on the product and its benefits. To provide support for this notion, we directly manipulated the degree of prominence given to the product's environmental characteristics using both text information and an eco-label. We find that explicit and implicit communications can affect both performance evaluations and purchase intent and that this effect differs depending on both typicality (Study 1) and optionality (Study 2).

In Study 1, we examine the role of a green product advertising strategy by using attribute-related information, as well as the boundary condition of green product typicality to explore how congruity between the message and the perceived category associations may influence evaluations. We find that when green aspects are common in the selected product category, congruity between the explicit green signals enhances both performance

evaluations and purchase intent. Conversely, when the category is not associated with greenness, implicit signals are more beneficial to both dependent variables. In Study 2, we extend the notion of congruity to optionality. We find that when attributes are optional, implicit signals positively influence evaluations and intent, as the optional attribute is independent of the core product. However, when attributes are not optional, explicit green signals are the preferred advertising strategy. These findings imply that the negative impact of green attributes on both performance evaluations and purchase intent may be due, at least in part, to the incongruity of firm-developed advertisements—that is, when the message content does not align with consumer notions about product categories and benefits.

Theoretical Implications

Whereas prior research on green consumer decisions presents conflicting findings as to the most appropriate technique to encourage green product adoption (e.g., Chernev and Blair 2015; Gershoff and Frels 2015; Newman, Gorlin, and Dhar 2014), we contribute to resolving this matter by demonstrating that the perceived incongruity between green products and performance can be alleviated through an appropriate green product advertising strategy. Our findings also provide further insights into the literature on product categorization and communications. In particular, we show that the product category can influence the effect of a green product advertising strategy on performance evaluations. Moreover, we show that when product-related attributes are made prominent, if consumers perceive them as incongruent with the benefits associated with the product category, the resulting incompatibility will further degrade their performance evaluations. This finding extends prior work that examines congruity in product and promotion benefits (Chandon, Wansink, and Laurent 2000) and hedonic and utilitarian product attributes (Bodur, Gao, and Grohmann 2014). In addition, our findings counter the notion that brands can benefit from offering

environmental attributes with incongruent benefits with the product category (e.g., LeBoeuf and Simmons 2010).

Finally, we extend the notion of message–benefit congruity to optionality. We find that optionality operates in a similar manner to typicality, in that an optional attribute, which is not fundamental to the operation of the core product, exerts a similar impact on the relationship between green product advertising strategy and performance evaluations and purchase intent. In this respect, the findings offer a new perspective on the concept of optionality. Whereas prior research provides insights into marketing strategies intended to alleviate the performance risk associated with green products (e.g., Luchs et al. 2010; Shimp and Bearden 1982), our study is one of the first to explore the role of optionality, derived from innovation locus research, to overcome the dilemma.

Managerial and Public Policy Implications

In developing their green product advertising strategies, marketing managers must make important decisions. While firms have often attempted to enhance their environmental credentials by emphasizing a new product's green attributes, we show that this may have detrimental effects. That is, our findings show that it would be prudent to match the advertisement and its information to the product being marketed, in terms of both its associated category and the optionality of the attribute. Extending this, as green products are often associated with performance liability, firms would do well to tailor their advertising to meet the expected benefits associated with a given product category. For example, when developing a green sports car, firms could use an implicit signal approach to reduce incongruity between the environmental attribute and product performance. While it may seem at odds with a firms' own desire to promote their newest green products via their environmental attributes, we show that doing so may have negative consequences. Research has consistently shown that consumers want to alter their consumption habits via positive

green product attitudes (e.g. Nielsen, 2014). The issue, therefore, is not in their attitude, but their intent. Indeed, scholars have highlighted the formidable challenge faced by firms in relation to encouraging green behavior (Zou and Chan, 2019). By highlighting green attributes, firms risk generating weak performance associations. Thus, by downplaying product greenness, firms may be better able to get their products in the hands of consumers, as the product is promoted based on more traditional aspects, alleviating potential performance risk.

This research also provides useful insights for green product managers. By integrating the new environmental attribute into the base product, firms can disrupt prior knowledge, leading to greater performance risk (Ma, Gill, and Jiang 2015). Thus, the concept of optionality has important managerial implications, as managers can alleviate the perceived green product performance risk, not only through an implicit advertising strategy but also through optionality. By making the new green attribute an option, firms are seemingly separating the attribute from the base product, and thus performance liability perceptions will not transfer, because the attribute does not affect the functioning of the core components.

In addition, our results have important implications for public policy makers. Encouraging people to engage in environmentally sustainable behaviors is arguably one of the greatest challenges facing the world today. Our results lend support to the notion that consumers are more likely to engage in prosocial actions when the request for help is accompanied by some form of benefit to the self (Holmes, Miller, and Lerner 2002). In the domain of energy conservation, for example, a benefit appeal might emphasize money savings to the homeowner or, in the case of this research, highlight performance aspects. Thus, when encouraging consumers to act in a more sustainable manner, downplaying the environmental aspects of the behavior may further increase evaluations and intent. Moreover, our results suggest that optionality could play a role in determining green behavior. Informing

consumers about and providing them with reasonable options may do more to encourage green behavior, as they would be acting out of their own volition. Such actions may persist for a longer time than actions that are forced (Ryan and Deci 2000).

Future Research Directions

This research can be extended in several ways. First, in this investigation of green understatement, we measured consumers' performance evaluations and purchase intent. Although performance is a critical influencer of purchase intent (Newman, Gorlin, and Dhar 2014), further research could expand on this study by using objective purchase data. This could be beneficial, as prior research has demonstrated the gap between consumers' environmental attitudes and their green product purchase behavior (Moraes, Carrigan, and Szmigin 2012; Vermeir and Verbeke 2006). Thus, an examination of the real-world impact of green advertising strategy and especially green understatement would be a prudent follow-up to this research.

Second, further research might examine different aspects of advertisement development to determine how tactics such as the use of color may influence perceptions of product performance. For example, Seo and Scammon (2017) find that a color that matches the content of a given message aids in information processing and that green, in particular, can lead consumers to perceive the brand as more environmentally friendly. Thus, color may pose another method for firms to employ when altering the explicitness of a green product communication appeal. Moreover, as colors may hold referential meanings (e.g., blue with competence and calmness; Fraser and Banks 2004), it might be possible to reduce performance concerns through color while maintaining an explicit text strategy.

Third, both studies used products that could be classified as high in terms of consumer involvement (i.e., laundry detergent and a washing machine). In reality, however, green products encompass a wide range a product types that could have an impact on how green

advertising strategies influence performance evaluations. For example, Bodur, Gao, and Grohmann (2014) suggest that ethical attributes congruent with the product category (i.e., hedonic vs. utilitarian) can overcome the liability associated with green product performance. This highlights the important role of environmental attribute–product category congruency, as uncovered by the concept of performance criticality. However, further research should conduct a more detailed investigation into the role of congruency and its impact on green product evaluations.

Finally, optionality is a relatively new field in marketing literature and deserves further exploration. In this research, we focus on standard environmental attributes. However, firms may use optionality when introducing new innovations across product categories, and factors such as temporal variation and environmental consciousness are likely to affect its effectiveness (Ma, Gill, and Jiang 2015). Moreover, research should examine optional attribute consumption. While the scope of this research was to examine performance evaluations, as well as purchase intent, it was not the scope of our study to explore actual product consumption. If an attribute is made optional, consumers will need to activate it before use. This approach is termed opt-in. However, the opt-out or default approach can increase the likelihood of a given action. For example, Johnson and Goldstein (2003) show that an opt-out policy results in almost twice as high organ donation rates as an opt-in policy. Thus, further research might examine different modes of optionality to determine actual usage levels. Although optionality may increase performance evaluations, it is equally as important to ensure that consumers make use of products' environmental benefits.

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Fig. 1. Green product advertising strategy and typicality on purchase intent.

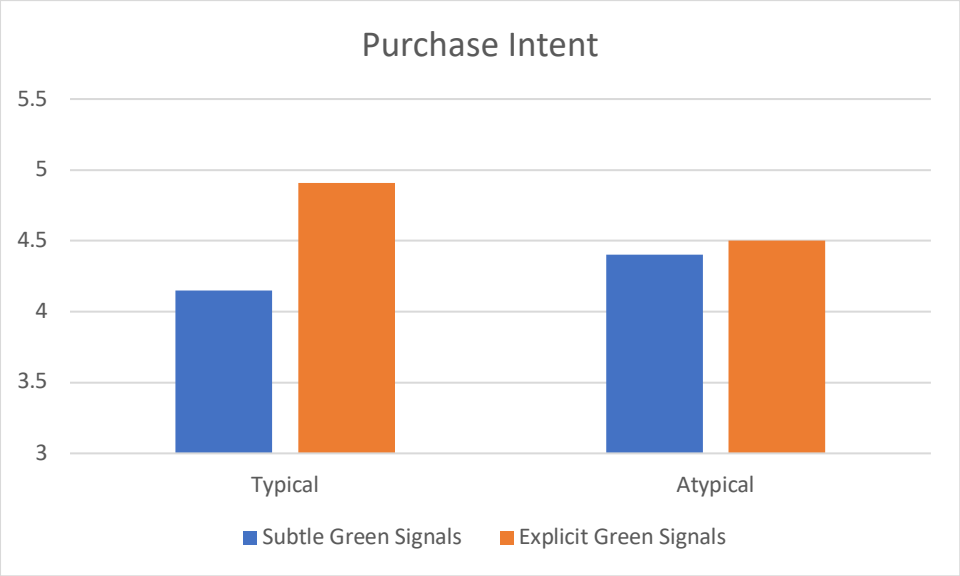


Fig. 2. Green product advertising strategy and typicality on performance evaluations.

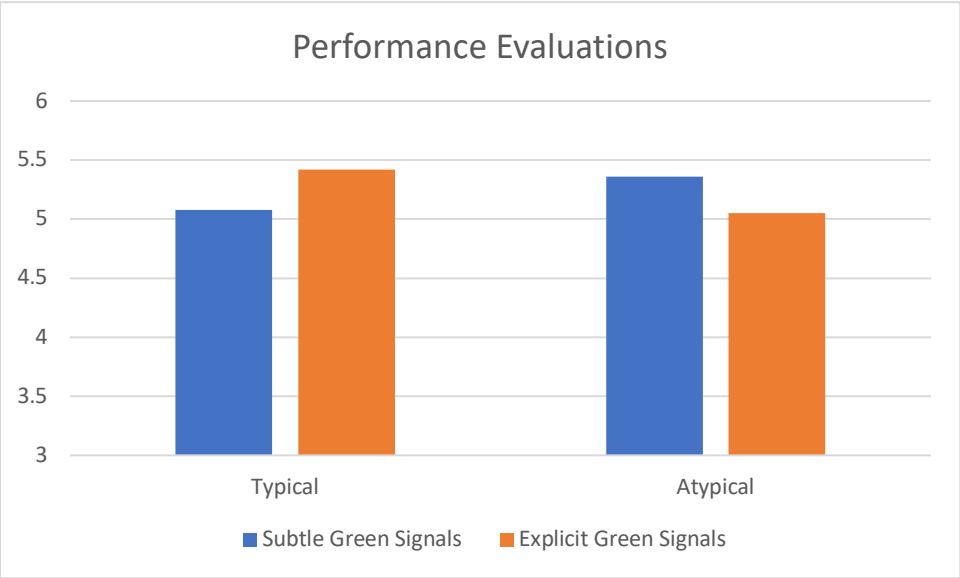


Fig. 3. Green product advertising strategy and green attribute optionality on performance evaluations.

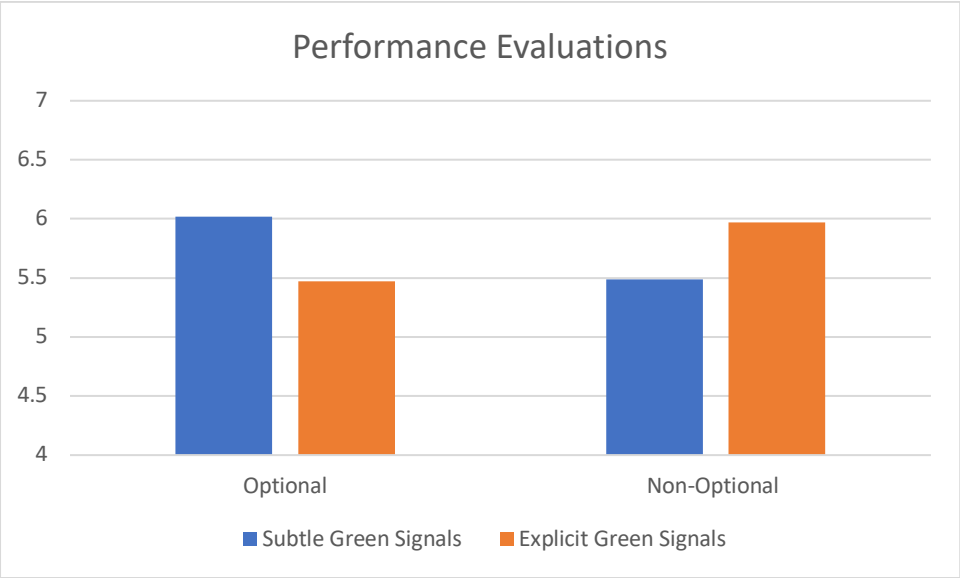
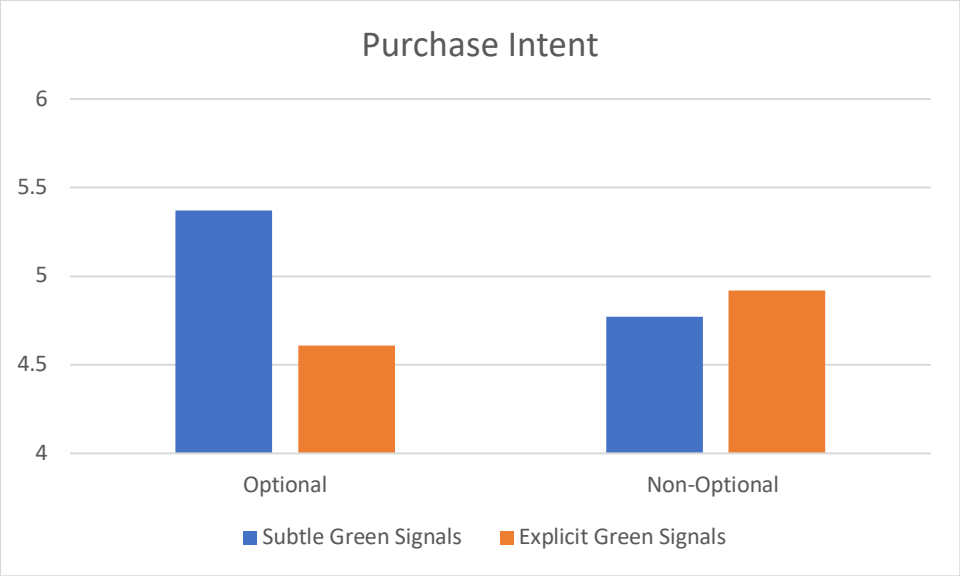


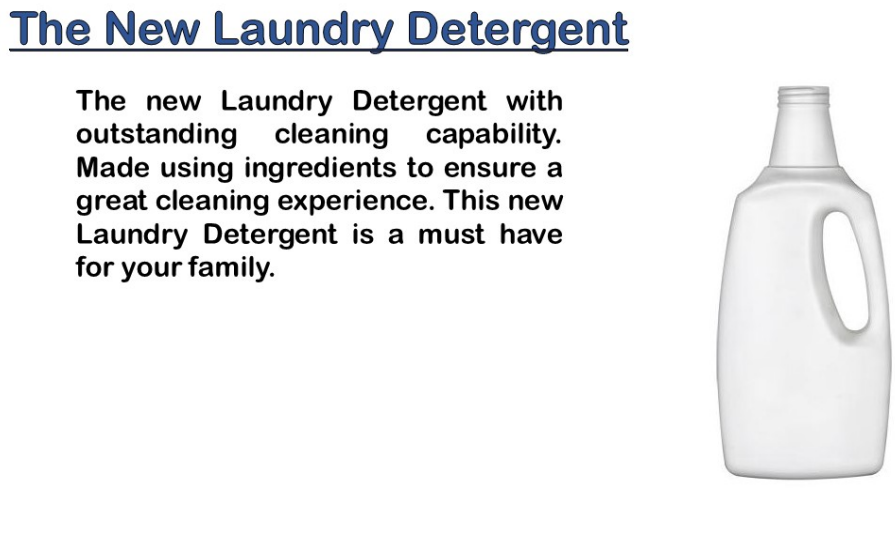
Fig. 4. Green product advertising strategy and green attribute optionality on purchase intent.



Appendix A: Manipulations for Study 1

Explicit Green Signals

Implicit Green Signals



Typical

Green products are common within the detergent product category. In fact, recent industry reports suggest that more than 50% of the sector's manufacturers offer a green product.

Atypical

Green products are not common within the detergent product category. In fact, recent industry reports suggest that less than 10% of the sector's manufacturers offer a green product.

Appendix B: Manipulations for Study 2

Implicit Green Signals/Nonoptional Green Attribute

Implicit Green Signals/Optional Green Attribute

Explicit Green Signals/Nonoptional Green Attribute

Eco-Friendly Washing Machine

Reduced environmental impact with lower water and electricity consumption

Powerful washing and gentle care in the same time

With the new drum that protects clothes and prevents damage

Explicit Green Signals/Optional Green Attribute

Eco-Friendly Washing Machine*

Reduced environmental impact with lower water and electricity consumption

Powerful washing and gentle care in the same time

With the new drum that protects clothes and prevents damage

** Only when the user-activated eco-friendly mode is switched on.*