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# Green is the New White: How Virtue Motivates Green Product Purchase

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## Abstract

It is important to understand the drivers of green consumption, because of growing concern for the health of the planet. In this paper, the assumption that a virtue-green product relationship exists is tested. The objective is to understand how product morality (versus that of the person using it) can influence the valuation of green products. Relying on virtue theory and positive spillover as conceptual bases, the research implicitly and explicitly tests and confirms green (versus conventional) product virtue. The results demonstrate that perceived green product virtue leads to positive emotions, which explain heightened purchase intentions. In line with the conceptualization, I show that the effect is moderated by the importance consumers place on their own morality (i.e., cultivating personal virtue). Importantly, explicitly framing green products as virtuous activates positive spillover (i.e., prosocial behavior) by consumers; when green products are branded with a virtue cue, they encourage consumers to be more virtuous. Beyond being perceived as better people, when consumers interact with green products they effectively engage in more moral acts, such as making donations. The results confirm the perception of green products as moral agents and provide marketers with insights into the marketing value of virtue cues in green product consumption.

**Keywords** Green consumption · Virtue theory · Positive spillover · Moral character · Prosocial behavior

## Introduction

In recent years, green products have become ubiquitous, and the growth of the green industry and the commercial appeal of green products come as no surprise. Green products are defined as those containing one or many environmentally friendly components, making them less polluting, more renewable, and overall less harmful to the environment (Gershoff and Frels 2015; Luchs et al. 2010; Shrum et al. 1995). Indeed, close to 66% of consumers are willing to spend more on a product if it is identified as green or sustainable (Nielsen 2015). Importantly, a recent study shows that 70% of consumers feel that it is their responsibility to engage in more green behaviors, but 52% also feel manufacturers and producers should be more responsible (Young 2018). Furthermore, the sales of many green products have steadily increased over the past decade. For example, hybrid and electric cars are set to represent 35% of all new light duty vehicles in 2020, even if “total-cost-of-ownership advantage

will continue to lie with conventional cars” (Bloomberg 2016).

While research has identified the benefits of green consumption (e.g., Haws et al. 2014) and the values that drive green consumption (Dreezens et al. 2005; Van Doorn and Verhoef 2011), it has yet to identify conclusively the determinants of green product valuation. Rather, the literature on green products has focused on profiling the green consumer (Schlegelmilch et al. 1996; Shrum et al. 1995), marketing strategies to increase green product purchase (Kronrod et al. 2012), perceptions of those who consume green products (Mazar and Zhong 2010), the centrality of greenness in product evaluations (Gershoff and Frels 2015), motivations behind acquiring green products (Griskevicius et al. 2010; Van Doorn and Verhoef 2011), and the brand implications for firms introducing novel green products (Olsen et al. 2014). Together, this body of research suggests that consumers behave differently with regard to green products than to conventional products.<sup>1</sup>

A common explanation for the growth of green consumption is the positive social and moral standards that it represents: doing what is best for the greater good, making the

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<sup>1</sup> Unlike green products, conventional products are those produced using items, ingredients, and/or methods that are not considered ethical, environmental or prosocial.

world a better place for tomorrow, etc. Anecdotally, goodness and virtue are oft-used marketing arguments for green products. For example, *Innocent* juices, *Honest* beverages, and *Virtue* Haircare are but a few examples of companies that use virtue-based appeals in their branding to market green products. Theoretically, contributing to the greater good and to the welfare of others is associated with virtue (c.f. Haidt and Joseph 2004), and thus it can be assumed that consumers implicitly and intuitively believe green products (with their environmentally friendly components) to be more virtuous. However, while researchers have investigated virtuous consumption practices (e.g., Garcia-Ruiz and Rodriguez-Lluesma 2014), few have examined the virtue of green products, and even fewer the marketing benefits of branding a green product as virtuous.

Indeed, much research has studied vice and virtue products and implicit consumer assumptions about them. For example, healthier foods (perceived as virtue goods) are intuitively perceived as more expensive for consumers (Haws et al. 2017). Likewise, consumers with more financial resources are perceived as more morally entitled to consume green products (Olson et al. 2016). As well, consumers are willing to pay more for vice products and are less likely to accept higher prices for virtuous products (Dhar and Wertenbroch 2000; Wertenbroch 1998). Together, these results suggest a virtue/vice and value relationship as it pertains to green products. Yet, these research results, coupled with the aforementioned market statistics, also suggest dueling perspectives and lack of clarity regarding the drivers of green consumption, specifically why consumers may choose green versus conventional products, and how the value of green products is conceptualized in the minds of consumers. The assumption that green products should be more valued because they are virtuous remains untested.

Understanding the relationship between green products and their valuation, and the effect of virtue in driving this effect, is important for three main reasons. First, because green products are often more expensive than conventional products. For example, organic food is on average 47% more expensive than conventional equivalents (Consumer Reports 2015). While legitimate reasons explain why green products are often more expensive than their conventional counterparts (e.g., higher production costs, limited supply, fewer technological innovations; FAO 2019), consumers may not always understand these. As such, it is important for marketers to know how to position green products in consumers' minds to reduce price-sensitivity.

Second, many intuitions are implicit, in that consumers may not even realize that these are driving their judgement of green products. As research suggests, consuming green products, versus conventional products, may result in positive spillover rather than moral licensing. For example, Juhl et al. (2017) demonstrate that consumers who buy organic

food are, over time, more likely to purchase more organic food and other organic goods. Unlike other common market-based intuitions, which often lead to negative consequences for consumers, such as feeling less satisfied after consumption (Finkelstein and Fishbach 2010), or excessive consumption of "virtuous" foods (Provencher et al. 2009), the green-is-virtuous intuition may actually result in positive consumption behavior—both for the consumer and for society.

Third, if the green-is-virtuous intuition is indeed the mechanism driving green product valuation, and if this mechanism results in positive spillover, it can be suggested positive affect may have a role in green consumption. Research shows that emotions drive prosocial behavior (Aquino et al. 2011; Cavanaugh et al. 2015). Market examples further suggest a link between product greenness, virtue, and happiness. For example, the insinuation in Nature's Paths (an organic food company) advertising claim of "delicious goodness" is that great taste and positive emotions are intertwined with the morality of green consumption. Thus, the very relevant question of whether consumers are willing to pay for green products because these are more virtuous, thereby contributing to consumer happiness, remains untested.

To address these gaps and provide insight into the green = goodness intuition, this research relies on two main bodies of work: virtue theory and the theory of positive behavioral spillover. Across four studies, I test green products and their virtuousness to elucidate the intuition and both its downstream effects and boundary conditions. First, I examine the virtuousness of green products (versus conventional products), using an implicit approach, which I then confirm in a direct online experiment. Green product virtue is shown to result in increased purchase intentions. A third study confirms this effect and shows the role of positive affect while simultaneously highlighting the fact that the importance a consumer places on their moral character moderates the positive affect perceived in green consumption. Finally, a field study examining consumer choice and subsequent behavior highlights how framing green products as virtuous (versus no frame) motivates purchase intentions and stimulates additional virtuous acts, such as donations to green causes.

Consequently, this article makes four contributions. First, it provides direct and indirect evidence of the intuition that green products are inherently virtuous, and shows that this intuition influences consumer judgments and decisions. Second, it demonstrates that in the case of green products (a virtuous versus vice product), virtue drives purchase intentions because of positive affective spillover. It therefore adds to the growing literature on green products as a distinct category of products and on green consumption behavior. Third, the article confirms that green product virtue speaks

to intrinsic consumer motivations, in line with the positive behavioral spillover framework. It shows that if consumers are exposed to green products, they experience positive emotions, resulting in purchase intentions. It also shows that framing green products as virtuous increases both purchase likelihood and prosocial behaviors. Fourth, the article demonstrates that green product virtuousness depends on the importance that consumers place on their moral character—when consumers perceive themselves as virtuous, they are more likely to experience positive emotions when interacting with green products.

Overall, the paper explains the psychological underpinnings of green product consumption and explicitly highlights the roles of green product virtuousness and positive affect. Green products make consumers feel good because they are perceived as virtuous and that augments the valuation of these types of products. Consequently, the paper offers insight to firms already using virtue cues on green products by explaining why such cues work. As well, firms with green products are encouraged to frame these using virtue in order to ensure their valuation.

## Green Products and Virtue: A Positive Spillover Perspective

### Green Products are Virtuous

The literature proposes that products, especially foods, can be classified as either virtue or vice (Liu et al. 2015; Van doorn and Verhoef 2011). Virtue products (i.e., “shoulds”) are prudent choices that provide lower short-term rewards but have fewer negative long-term consequences than vices. Vice products (i.e., “wants”) provide immediate pleasurable experiences but contribute to negative long-term outcomes (Khan and Dhar 2007; Milkman et al. 2008; Wertenbroch 1998). Virtue products are perceived as beneficial for the future, even though users experience psychological, physical, and emotional costs during consumption (Ein-Gar and Steinhart 2011; DellaVigna and Malmendier 2006). Thus, virtuous products are those that consumers should choose because they are better (i.e., good) for themselves and/or society. Alternatively, vices are detrimental (i.e., bad) for the individual and/or society even if this can make them more appealing. As Wertenbroch (1998) argues, virtue products require more self-control (i.e., not giving in to wants) and self-control is defined as having a moral muscle (Baumeister and Juola Exline 1999). Likewise, making a choice that considers others and society in addition to making choices that have long-term implications, as is the case for green products, is considered a should/virtue choice. Consequently, virtue goods and goodness are related and as green products contribute to the greater good and to long-term common

goals (e.g., less pollution, greater health), they can be conceptualized as virtuous.

People develop everyday evaluations of virtue or “goodness” very early in life; children are taught early what is right and what is wrong (Todorov et al. 2009; Willis and Todorov 2006). Indeed, goodness should be cultivated over a lifetime, and being virtuous is perceived as being good; morality thus relies heavily on virtuousness (Graham et al. 2013). Virtue corresponds to the “ethics of community” as a generalized moral belief (Haidt and Joseph 2004).

As consuming green is related to maintaining a healthy environment for the community, virtue is a likely mechanism explaining green product valuation. Recent examinations of sustainability and green initiatives by firms suggests this to be true. For example, consumers reward firms they perceive as more prosocial (Mohr et al. 2001). If virtue (versus vice) products are perceived as good because they correspond to “shoulds” rather than “wants” (Dhar and Wertenbroch 2000; Wertenbroch 1998), and green products are perceived as good (for the environment and for the individual; Gershoff and Frels 2015; Luchs et al. 2010), then green products should be perceived as virtuous. Indeed, depending on how they are made and how they are positioned, products can become physical representations and manifestations of consumer beliefs, explaining product attraction and valuation (Huber et al. 2018; Munichor and Steinhart 2016; Newman and Dhar 2014; Sirgy 1982). Green products therefore become representations of consumer beliefs regarding virtue, and consumers value green products because they believe them to be virtuous.

**H1:** Green products are perceived as more virtuous than conventional products.

### The Warm Glow and Positive Spillover of Green Product Virtue

Good begets good, as Andreoni (1990) suggests in warm glow theory. Warm glow is defined as an intrinsic motivation that stems from a desire to be altruistic and as an emotional reaction experienced by those acting pro-socially (Andreoni 1990; Loewenstein and Small 2007; Sun and Trudel 2017). Warm glow often creates positive spillover effects. Behavioral spillover theory suggests that, over time, consumers will associate the benefits of one target with another target (Swaminathan et al. 2012). The spillover effects of sustainable products have been chronicled, such that buying one sustainable product can lead to the purchase of another sustainable product (Juhl et al. 2017), and the same can be found for pro-environmental behaviors (Lanzini and Thøgersen 2014; Thøgersen and Crompton 2009).<sup>2</sup> Thus, warm glow, when

<sup>2</sup> Although other research supports a moral licensing perspective, where consumers initially behave morally and after compensate with immoral behavior (Blanken et al. 2015; Mazar and Zhong

perceived, is likely to motivate more positive consumer behavior and perceptions. For example, warm glow increases charitable giving (Crumpler and Grossman 2011) and has been associated with low-cost sustainable behaviors (van der Linden 2018).

Due to the intrinsic motivational nature of warm glow, research posits that it influences behavior more than extrinsic rewards do, because extrinsic rewards decrease the purity of green consumption (Ariely et al. 2009). This would mean that positive emotions generated by altruistic or socially oriented behavior would be more rewarding than receiving public praise for such behavior. Research suggests that contributing to the greater good triggers both moral and personal satisfaction (Andreoni 1989, 1990; Haidt 2003). While much research has focused on the negative emotions of prosocial consumption, such as guilt avoidance (Antonetti and Maklan 2014; Antonetti et al. 2015), positive emotional responses are also part of prosocial consumption. For example, green products can generate positive emotions (i.e., intrinsic rewards) while limiting negative ones (Amatulli et al. 2015; Sachdeva et al. 2015). Furthermore, consuming green products communicates virtuous intentions by the consumer (i.e., wanting to be a better person; Mazar and Zhong 2010), which can be related to personal objectives such as eudemonic living (Deci and Ryan 2008; Franco et al. 2016).<sup>3</sup>

Marketing research has shown that positive emotions (including pride, hope, compassion, and love) provoke prosocial behavior (Cavanaugh et al. 2015), increased consumer satisfaction, and purchases of brands linked to prosocial causes (Andrews et al. 2014; Giebelhausen et al. 2016). As warm glow is associated with positive emotions, and green consumption can lead to positive emotions, I propose that exposure to green products (perceived as virtuous) is likely to stimulate warm glow. Furthermore, as positive emotions are associated with higher purchase intentions for green-oriented brands, green products, if they are perceived as virtuous, can be expected to elicit positive emotions, thus explaining purchase intentions. If consuming green products provides intrinsic rewards (Liedtka 1998) and results

in positive emotions (Amatulli et al. 2015; Sachdeva et al. 2015), then positive spillover from the experience of warm glow is likely to occur. Stated otherwise, consuming products that are perceived as inherently “good” activates psychological benefits, in the form of positive emotions, which consumers express via increased purchase intentions.

**H2:** Green products (versus conventional products) are more likely to be purchased because they elicit positive emotions.

Concurrently, as positive behavioral spillover effects are more likely to occur when green products or the act of consuming them evokes or speaks to consumers’ intrinsic motivations (Schnall et al. 2010; Truelove et al. 2014), I also posit that the positive spillover effect of perceived green product virtuousness can motivate positive moral behaviors. Virtuousness is expressed through practice (Haidt and Joseph 2004), and these practices define socially acceptable standards of excellence that procure not just external benefits (i.e., fame and money) but also intrinsic, internal rewards (i.e., transformation and cooperation) (Liedtka 1998).

Past research suggests that positive behavioral spillover is related to strengthening an environmental self-identity (i.e., engaging in more environmental behaviors and have more pronounced environmental attitudes) (Lacasse 2016). Furthermore, consuming virtue products, such as green products, can spillover to self-identity and bolster a consumers’ moral identity—for status reasons (Griskevicius et al. 2010), because consumers feel positively labeled by other consumers (Mazar and Zhong 2010), or because consumers reinforce their own moral self-identity when they are labeled by others (van der Werff et al. 2013). For example, past research shows that pro-environmental attitudes and behaviors are related to an ‘environmental’ self-identity (Lacasse 2015). I suggest the same can occur for a green product that is framed as virtuous and moral. Specifically, I suggest that if green products are framed as virtuous, they are more likely to elicit a positive behavior spillover due to the experience of warm glow and positive emotions, and thus motivate the willingness to act virtuously, through further prosocial behavior.

**H3:** Consumers who perceive virtue in green products are more likely to act virtuously in the future (e.g., prosocial behaviors).

## Green Product Virtue and Moral Character

Past research has examined how moral identity influences green products consumption and green product involvement (Jia et al. 2017; Wu and Yang 2018). Moral identity is an important driver to green consumption, especially when consumer responsibility is made salient. Research has also examined the sociodemographic antecedents of green consumption, such as education, political stance, and income (Gilg et al. 2005). However, Blasi (2005) outlines that

Footnote 2 (continued)

2010), more recent literature (e.g., Juhl et al. 2017) suggests positive spillovers from green consumption to be more likely. Furthermore, Blanken et al. (2015) note in their meta-analysis that a) moral licensing effects are more likely to be found in published (vs. unpublished) papers, and b) that sample sizes used to determine the moral licensing effect are often small, making it difficult to draw conclusions regarding this effect.

<sup>3</sup> This is distinct from consuming green products because they contain a virtuous essence than can transfer to the consumer (Newman and Dhar 2014). In this research, we seek to examine the inherent nature of green products versus the inherent nature of the consumption act.

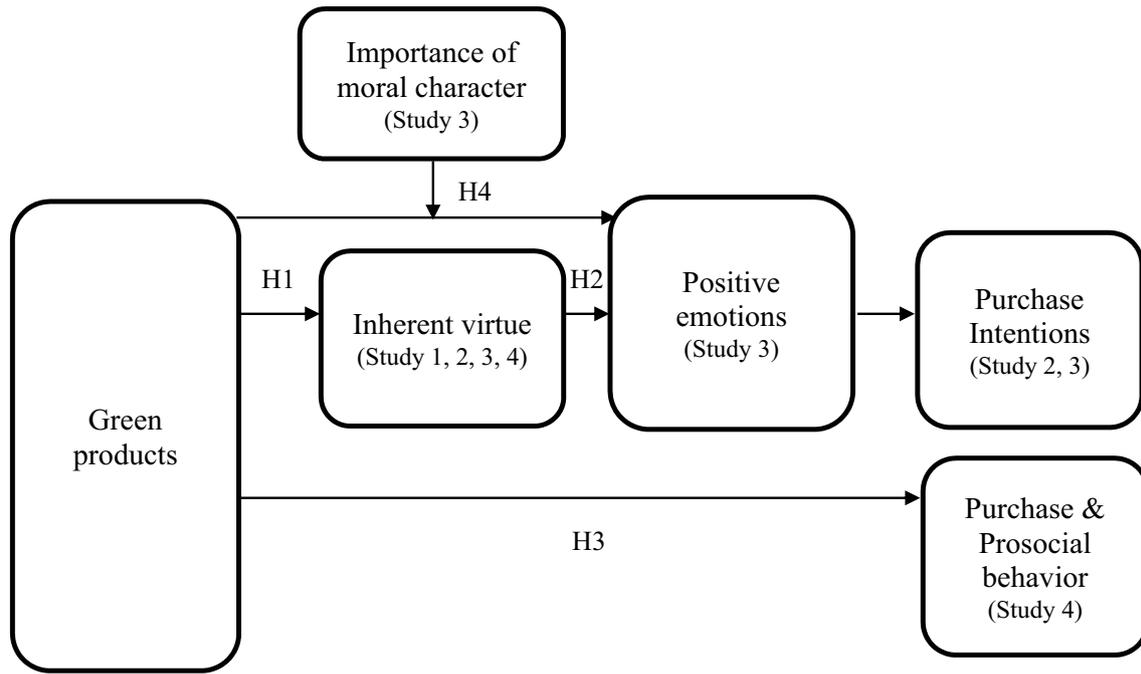


Fig. 1 Conceptual model

certain relatively stable individual dispositions emphasize morality, suggesting that moral traits may also motivate green consumption. Specifically, virtue theory considers the purpose, the individual, the collective, and the cultivation of character. Virtue is defined as “any psychological process that enables a person to think and act so as to benefit him- or her-self and society” (McCullough and Snyder 2000, p. 1). A person is good if they have virtues and having virtues helps develop character (Arjoon 2000). This suggests that consumers are more or less likely to act virtuously, depending on their personality. Indeed, the premise of positive psychology is, in part, the ideal of nurturing “the good life” and cultivating civic virtues (Seligman 2011). Virtues are components of character, which is a whole (Hartman 1998). And a “good life is an integrated life, one committed to a consistent set of values, principles, projects, people, and in many cases to a community, that can give it meaning,” (Hartman 1998, p. 551), suggesting that virtue and moral character are positively related.

This research examines how a consumer’s overall moral character, closely related to virtues (Arjoon 2000; Liedtka 1998), determines green product evaluations. Moral character is defined as “an individual’s characteristic patterns of thought, emotion, and behavior associated with moral/ethical and immoral/unethical behavior (Cohen et al. 2014, p. 944); moral character is not about avoiding negative outcomes but rather about actively seeking to be dignified. Interestingly, moral character is specifically related to virtue (Lapsley and Lasky 2001) and the virtuousness is said

to build character (Liedtka 1998). Concurrently, the trait of honesty (a virtue) is consistently related to moral character (Lapsley and Lasky 2001; Walker and Pitts 1998). I assume that consumers for whom virtue is important score higher on self-reported moral character. Additionally, if inherent product virtue is the mechanism motivating green product consumption, then consumers who consider moral character important will probably perceive more personal and product level benefits in consuming green products (assuming they do perceive them as virtuous). Thus, consumers who emphasize their moral character may be likely to perceive more intrinsic rewards (i.e., positive emotions) when interacting with green products, because they perceive them as virtuous. Figure 1 details the complete conceptual framework.

**H4:** Consumers with a strong (weak) focus on their moral character perceive more (less) positive emotions from interacting with green products.

### Study 1: Testing Implicit Virtue Perceptions of Green Products

The objective of Study 1 was to test the intuition that green products are virtuous. Study 1 tests whether green products are more virtuous than conventional products, or the lay theory that “green is good.” In order to examine this effect, I conducted an Implicit Association Test (IAT: Greenwald

**Table 1** Word stimuli used in IAT (Study 1)

Attributes		Type	
Green	Conventional	Virtue	Vice
Organic	Unrecyclable	Humble	Unclean
Sustainable	Made on a large scale	Honest	Dirty
Eco-conscious	Synthetic	Virtuous	Tainted
Earth-friendly	Chemical	Pure	Polluted
Energy efficient	Pollutant	Decent	Wicked
Recycled	Energy-consuming	Immaculate	Unhealthy
Renewable	Processed	Clean	Indecent
Biodegradable	Artificial	Safe	Profane

et al. 1998; Greenwald et al. 2003), using software provided by Inquisit.

## Method

A panel of 86 French respondents (50% men,  $M_{\text{age}} = 39.40$   $SD = 12.97$ ) was recruited via Qualtrics to participate in the IAT. Respondents classified the words that were shown in the middle of their screens in four categories: (1) words associated with virtue, (2) words associated with vice, (3) words associated with green products, and (4) words associated with conventional products; see Table 1 for the words used in the study. I took the words representing vice and virtue from the Moral Foundations Dictionary (Graham et al. 2009). I selected the words representing green and conventional attributes based on common marketplace appeals. As per the protocol established for IAT (Greenwald et al. 1998), participants completed seven blocks of trials, some of which were practice blocks and others test blocks. The test blocks consisted of pairings hypothesized to be congruent (block 4: 40 trials of virtue + green and vice + conventional) and incongruent (block 7: 40 trials of virtue + conventional and vice + green). After collecting the data, I followed the scoring algorithm (Greenwald et al. 2003) to eliminate trial response latencies greater than 10,000 ms and shorter than 300 ms (four respondents were excluded). I computed response latencies for the congruent and incongruent blocks (including even false responses) as well as the difference in score divided by the pooled standard deviation of response latencies across both blocks (the D-score).

## Results

Response latencies were significantly lower when respondents classified stimuli into the congruent (versus incongruent) categories. The mean response time was 1026.82 ms, when respondents were asked to classify congruent categories (pairing virtue with green and conventional with vice) compared with 1499.65 ms when they classified stimuli in

the incongruent categories (pairing virtue with conventional and vice with green). This difference in response time was significant ( $D = 1.49$   $SD = 1.05$ ,  $t(81) = 12.85$ ,  $p < 0.001$ ).

## Discussion

This result shows that consumers responded significantly faster when asked to pair virtue words with green attributes and vice words with conventional attributes than when asked to pair vice words with green attributes and virtue words with conventional attributes. This suggests that consumers have a stronger implicit association between green attributes and virtue than conventional attributes and virtue. The results of Study 1 support the main premise that consumers implicitly believe that virtue is associated with green products, in line with H1. The next study tests explicit beliefs about green products and the effect of their virtue on purchase intentions.

## Study 2: Green Product Virtue Leads to Higher Purchase Intentions

### Method

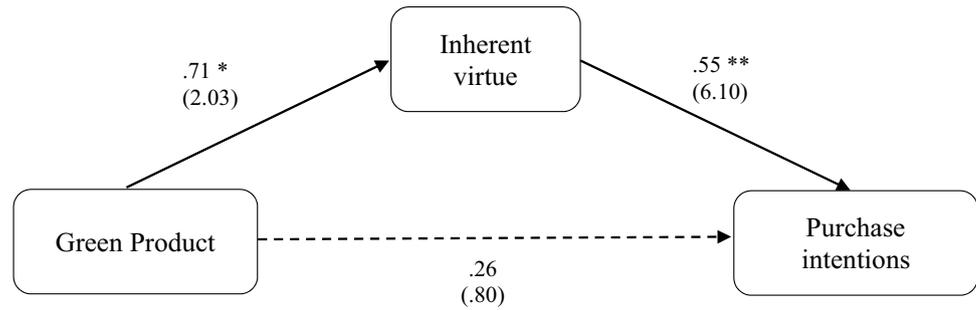
I created a between-subjects factorial design with two conditions—a conventional (i.e., non-green) product versus a green product. First, respondents saw a picture of and read a vignette about an unbranded face cream and its skin hydrating properties. The text was as follows:

Applying face cream is important for both men and women, especially in the winter, as it can reduce dryness and irritations that result from low temperatures outside and the lack of humidity in heated buildings. Emollients like petrolatum, lanolin, mineral oils soften and hydrate the skin by reducing dryness and creating an unctuous protective barrier on the skin that retains moisture.

Respondents were then randomly assigned to one of two conditions. In the conventional face cream condition, respondents read that the face cream contained synthetic hydrating ingredients, such as glycerin synthesized from synthetic propylene. In the green condition, respondents read that the face cream contained plant-based hydrating ingredients, such as glycerin synthesized from cane sugar glucose; see Appendix 1 for visuals and vignettes.

Participants then responded to a series of dependent variables. To measure product virtuousness, respondents rated how much they felt the product they saw seemed: honest, virtuous, fair, and righteous (1 = completely disagree to 9 = completely agree;  $\alpha = 0.92$ ). I then measured purchase intentions for the face cream with two-item nine-point bipolar scale (unlikely/very likely; improbable/very probable;  $r = 0.89$ ,  $p < 0.001$ ). I included a three-item manipulation

**Fig. 2** Mediation effects (Study 2). \*  $p < .05$ , \*\*  $p < .001$ , numbers in parentheses at  $t$  values, dashed line indicates a non-significant relationship



Note: \*  $p < .05$ , \*\*  $p < .001$ , numbers in parentheses at  $t$ -values dashed line indicates a non-significant relationship

check at the end of the survey to assess perceived product greenness (Gershoff and Frels 2015; 1 = completely disagree—9 = completely agree;  $\alpha = 0.96$ ). The measurement items appear in Appendix 2. Finally, as another implicit test of virtue, respondents indicated in which box they imagined the face cream would come in. Color-related research by Sherman and Clore (2009) suggests that black is perceived as immoral and white as moral. Presumably, if respondents imagined that the face cream would come in a black box they considered it less virtuous than if it came in a white box.

## Results

An online panel of 112 French respondents (from Qualtrics) answered the survey (44% men,  $M_{age} = 42.74$  SD = 14.01), receiving compensation for their participation. Six respondents never use face cream and were excluded from the subsequent analyses. Mean comparisons showed that the product greenness manipulation was successful ( $M_{conventional} = 5.69$  SD = 1.93;  $M_{green} = 6.90$  SD = 1.68,  $t(104) = 3.39$ ,  $p = 0.001$ ). Further  $t$ -tests revealed that respondents perceived the green product as significantly more virtuous than the conventional product ( $M_{green} = 6.55$  SD = 1.79,  $M_{conventional} = 5.84$  SD = 1.80,  $t(104) = 2.03$ ,  $p = 0.045$ ), and that consumers were marginally more likely to want to purchase the green product than the conventional product ( $M_{green} = 6.79$  SD = 1.81,  $M_{conventional} = 6.14$  SD = 1.98,  $t = 1.75$ ,  $p = 0.083$ ).

In a second set of analyses, I tested the specific predicted pathway of the condition (green versus conventional) leading to higher purchase intentions through product virtuousness. Mediation analyses in PROCESS (Model 4; Hayes 2013) indicated that respondents perceived the green product as more virtuous ( $b = 0.71$ , SE = 0.35, 95% CI [0.0168, 1.4010]) and that virtuousness led to higher purchase intentions for green products ( $b = 0.55$ , SE = 0.09, 95% CI [0.3709, 0.7283]). Importantly, the indirect effect was significant, with 5000 bootstrap samples 95% CI excluding zero ( $b = 0.50$ , SE = 0.27, 95% CI [0.275, 1.0669]). The

direct path was not significant. Figure 2 shows the mediation model. The results support H1.

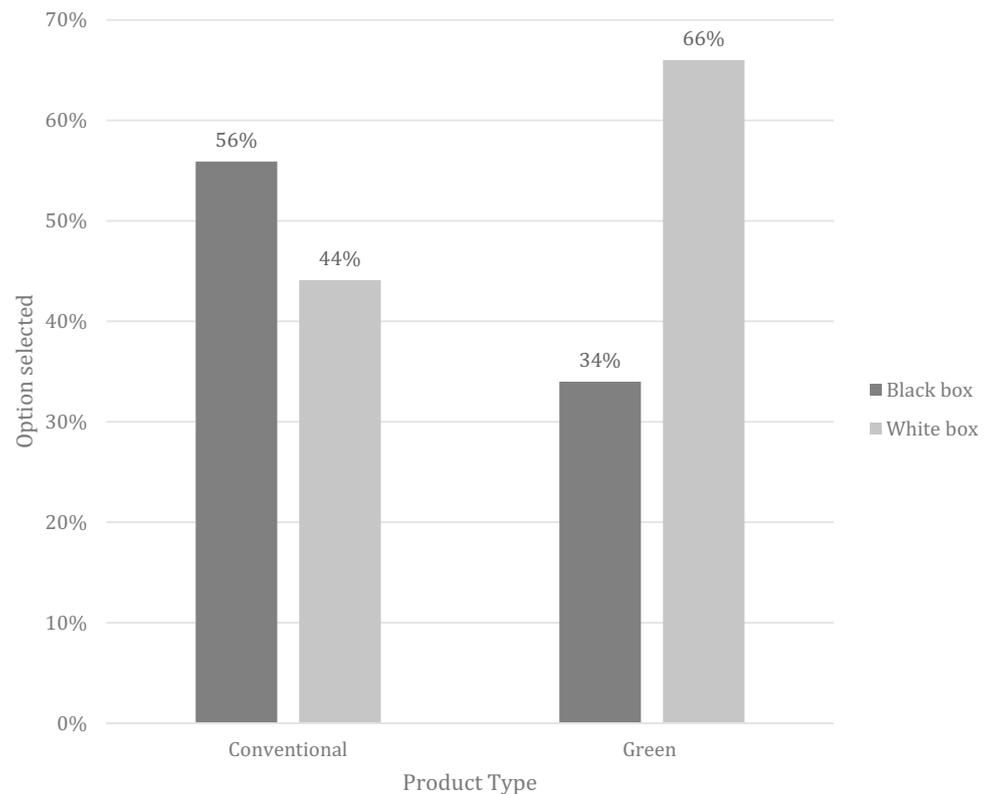
Finally, I conducted a cross-tab analysis to compare the likelihood of respondents presuming that the face cream came in a black or a white box was compared. A chi-square analysis showed that the green face cream was more likely (66%) to be associated with the white box, whereas the conventional face cream was more likely (56%) to be associated with the black box;  $\chi^2$  (df = 1,  $N = 106$ ) = 5.04,  $p = 0.025$ , further supporting H1. See Fig. 3.

## Discussion

The results of Study 2 corroborate Study 1, in that green products are perceived as more virtuous. The results of Study 2 further show that product virtuousness drives purchase intentions for green (versus conventional) products. Together, these studies show that whether tested implicitly or explicitly, consumers do in fact believe that green products are virtuous.

### Study 3: Green Product Purchase Is Driven by Positive Affect and Dependent on Moral Character

The objective of this study was twofold. First, it tested the hypothesis that consumers not only consider green products as more virtuous, but also feel positive emotions when using them, and thus feel good about themselves. The study tested the personal intrinsic rewards that consumers may experience when consuming green products. Furthermore, it examined how positive personal rewards spill over to the products that prompted these rewards. Put another way, if consumers think that green products are virtuous, they should experience positive emotions, which explains why they are more likely to purchase them. I hypothesized that green product virtue leads to positive emotions, increasing purchase intentions.

**Fig. 3** Product type and box color (Study 2)

The second objective was to confirm the role of cultivating moral character in green consumption, and that of morality and virtue as driving mechanisms in green product evaluations. I posited that those who cultivate moral character, and thus are more likely to act virtuously and consider this as important, would be more likely to experience pleasure when consuming green products. As such, I tested the role of moral character in moderating the pleasure of green consumption.

### Procedure

The study used a between-subjects design, similar to Study 2. First, participants read a short vignette about the importance of using sun protection, which read as follows:

Sunscreens are creams that filter ultraviolet sunrays and avoid sunburn. It is important to apply sunscreen to avoid the development of epidermoid carcinomas and other skin cancers.

Participants were then randomly assigned to one of two conditions containing an image of a Lakmé sunscreen brand (not readily available or known in France). In the conventional condition, participants read about the synthetic ingredients used to make the sunscreen (i.e., oxybenzone and palmitate retinol). In the green condition respondents read that

the sunscreen included only natural ingredients such as zinc oxide and minerals; see Appendix 1.

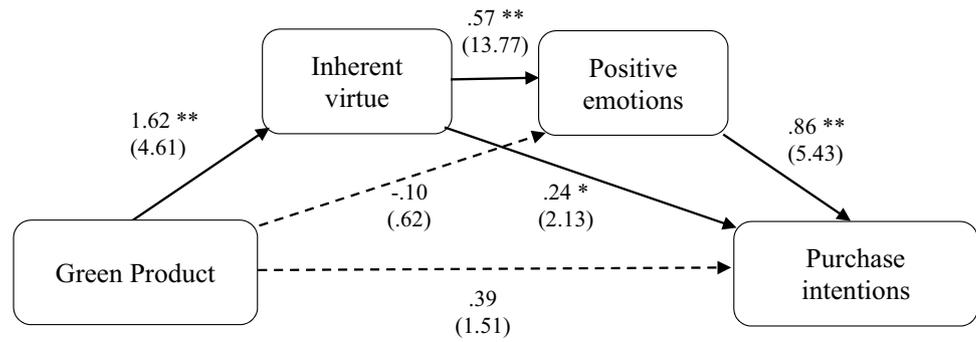
I used the same set of dependent variables and manipulation check as in the previous studies: product virtuousness ( $\alpha=0.95$ ), purchase intentions ( $r=0.95$ ,  $p<0.001$ ), and the greenness manipulation check ( $\alpha=0.97$ ). To gauge positive affect, I presented the following four positive emotions (similarly to Moorman et al. 2002; and Zhou and Soman 2003): happy, joyous, calm, and at peace (1 = completely disagree, 7 = completely agree;  $\alpha=0.89$ ).

Research suggests that moral character can be measured using self-reports (Cohen et al. 2014). As the objective in this measure was to gauge self-evaluated moral character, I devised a measure using 14 items (1 = completely disagree, 7 = completely agree;  $\alpha=0.88$ ; see Appendix 2). The moral character measure was inspired by the work of Cohen et al. (2014) and Helzer et al. (2014).

### Results

A Qualtrics panel of 107 French respondents completed the survey (36% men,  $M_{\text{age}}=43.68$ ,  $SD=13.56$ ) and received compensation for their participation. Qualtrics filtered the respondents, and only those who used sunscreen participated. A comparison of means with the condition (conventional vs. green) as a fixed factor showed that the

**Fig. 4** Full mechanism (Study 3). \*  $p < .05$ , \*\*  $p < .001$ , numbers in parentheses at  $t$  values, dashed line indicates a non-significant relationship



Note: \*  $p < .05$ , \*\*  $p < .001$ , numbers in parentheses at  $t$ -values  
dashed line indicates a non-significant relationship

conventional product was perceived as significantly less green ( $M_{\text{conventional}} = 4.21$   $SD = 2.37$ ) than the green product ( $M_{\text{green}} = 6.45$   $SD = 1.85$ ;  $t(94.51) = 5.42$ ,  $p < 0.001$ , Levene's test significant ( $F(1, 105) = 4.58$ ,  $p = 0.035$ ) indicating that the manipulation was successful. I observed the same pattern between the two conditions for product virtue ( $M_{\text{conventional}} = 4.64$   $SD = 2.07$ ,  $M_{\text{green}} = 6.26$   $SD = 1.55$ ;  $t(105) = 4.61$ ,  $p < 0.001$ ), positive affect ( $M_{\text{conventional}} = 4.22$   $SD = 1.38$ ,  $M_{\text{green}} = 5.05$   $SD = 1.22$ ;  $t(105) = 3.30$ ,  $p < 0.001$ ), and purchase intentions ( $M_{\text{conventional}} = 5.41$   $SD = 2.17$ ,  $M_{\text{green}} = 6.91$   $SD = 1.69$ ;  $t(105) = 4.01$ ,  $p < 0.001$ ).

First, I conducted a sequential mediation analysis, using PROCESS Model 6 (Hayes 2013), to test whether product virtue and positive affect mediated purchase intentions. Using 5000 bootstrap samples, the indirect effect of green product (versus conventional) through product virtuousness and positive affect on purchase intentions was positive and significant ( $b = 0.80$ ,  $SE = 0.23$ , 95% CI [0.4316, 1.3817]). The direct effect was not significant ( $b = 0.40$   $SE = 0.27$ , 95% CI [-0.1267, 0.9263]). Replicating the results from Study 2, the path from the green product through explicit product virtue on purchase intentions was significant ( $b = 0.24$ ,  $SE = 0.11$ , 95% CI [0.0161, 0.4633]). An analysis of the reverse path (positive emotions leading to inherent product virtue) was also significant ( $b = 0.22$ ,  $SE = 0.15$ , 95% CI [0.0049, 0.5940]), but the effect size was much smaller ( $b = 0.22$  versus  $b = 0.80$  with affect included). Finally, the indirect path through positive affect only was not significant ( $b = -0.09$ ,  $SE = 0.14$ , 95% CI [-0.3619, 0.1829]), suggesting that product virtue is important in determining purchase intentions for green products and that positive affect alone does not explain such purchase intentions; see Fig. 4. The results confirm H2.

Next, I examined the moderating role of the importance of moral character. Specifically, I examined whether consumers who placed more importance on their moral character were more likely to perceive pleasure from consuming

green products, explaining why they would be more likely to purchase green products. As it is already shown that green products are perceived as virtuous, we focused on the relationship between the product type and moral character in influencing positive emotions, especially as positive spillover is expected to interact with moral character as per H4. A moderated-mediation analysis (PROCESS Model 7, 5000 bootstrap samples; Hayes 2013) was conducted with product type as the independent variable, positive emotions as the mediator, purchase intentions as the dependent variable, and moral character as the moderator to the relationship between product type and positive emotions. The analysis revealed a significant condition by moral character interaction ( $b = 0.60$ ,  $SE = 0.29$ , 95% CI [0.0340, 1.1722]). The product type was not a significant factor ( $b = -2.27$ ,  $SE = 1.52$ , 95% CI [-5.2903, 0.7499]) nor was moral character ( $b = -0.13$ ,  $SE = 0.22$ , 95% CI [-0.5829, 0.3218]). The main effect of a green product (versus conventional) on purchase intentions was significant ( $b = 0.69$ ,  $SE = 0.22$ , 95% CI [0.2505, 1.1260]). Crucially, the index of moderated mediation around the importance of moral character did not contain zero (95% CI [0.0495, 1.2817]). The indirect effect of a green product on virtuousness perceptions through positive affect increases with the importance of moral character, as the index of moderated mediation is positive ( $b = 0.68$ ,  $SE = 0.31$ ). The effect is significant for consumers with average ( $b = 0.98$ ,  $SE = 0.29$ , 95% CI [0.4079, 1.5302]), and high ( $b = 1.58$ ,  $SE = 0.40$ , 95% CI [0.8118, 2.3841]) levels of moral character importance, but not significant for consumers with low levels of moral character ( $b = 0.37$ ,  $SE = 0.40$ , 95% CI [-0.3494, 1.2313]).<sup>4</sup> These results confirm H4.

<sup>4</sup> The analysis considered the mean and  $\pm 1$  SD. The sample size for each group was: low moral character importance = 24, average moral character importance = 67, high moral character importance = 16.

## Discussion

Study 3 confirms that green products are considered virtuous. The results replicate those of Studies 1 and 2. Importantly, Study 3 shows that green products are perceived as more virtuous, which leads to more positive emotions, explaining purchase intentions. Furthermore, and confirming the important role of virtue in green product consumption, the results show that those who value and cultivate their moral character are more likely to perceive pleasure from consuming green products. This suggests a positive virtue spillover effect, from product to consumer and back to the product. The next study examines whether the positive spillover effect can extend to the consumer's behavior if green products are specifically framed as virtuous.

### Study 4: The Positive Spillover Effect of Green Product Virtue

This last study had one main objective—to verify the positive behavioral spillover effect hypothesis, thereby examining whether green brands framed (i.e., branded) as virtuous are more likely to encourage virtuous behavior. I hypothesized that green brands marketed with virtue-related cues are likely to elicit positive behavioral spillover. This is shown in Studies 2 and 3—positive spillover from green product virtue cues positive emotions which explains heightened purchase intentions. In this study, the objective is to test actual purchase as well as additional virtuous behaviors. Precisely, I posited that consuming a green product that is explicitly framed as virtuous (versus no virtue cue) would provide consumers with more intrinsic rewards, thus encouraging them to act pro-socially. Stated otherwise, the more virtuous a green product, the more likely consumers are to experience and act (in this study, perform the additional virtuous act of donating) upon the warm glow procured by consuming the green product, thereby confirming positive behavioral spillover.

As well, the previous studies demonstrated the difference between conventional and green brands, so this next study examines green brands with (more virtuous) and without (less virtuous) an explicit virtue cue. It examines whether green brands benefit from identifying themselves explicitly as virtuous.

### Procedure

This was as a field study, conducted in the foyer of a French business school. I organized a experiment alongside the school's Oikos chapter. Oikos is “an international student-driven organization for sustainability in economics and management” (Oikos website 2018). The student partners set up

a fundraising campaign for their association, selling a cup of coffee for €0.40. They set up a table in the foyer, with posters advertising the event. The table presented, two thermoses of coffee, one containing what was identified as the “Annette” coffee blend, the other the “Honnête” coffee blend (Honnête means honest in French). Both coffees were identified as organic, thus green. The images were identical for both coffee ads (see Appendix 1 for visuals). After students and faculty bought one of the two coffee types, the students asked them if they would like to make an additional monetary donation to the Oikos association. Finally, the students conducting the study asked buyers their age, using the excuse that the association wanted to do some market research about its supporters. The students noted down the coffee selected, whether buyers donated money (i.e., dropped coins in the jar provided), their gender, and finally their age.

## Results

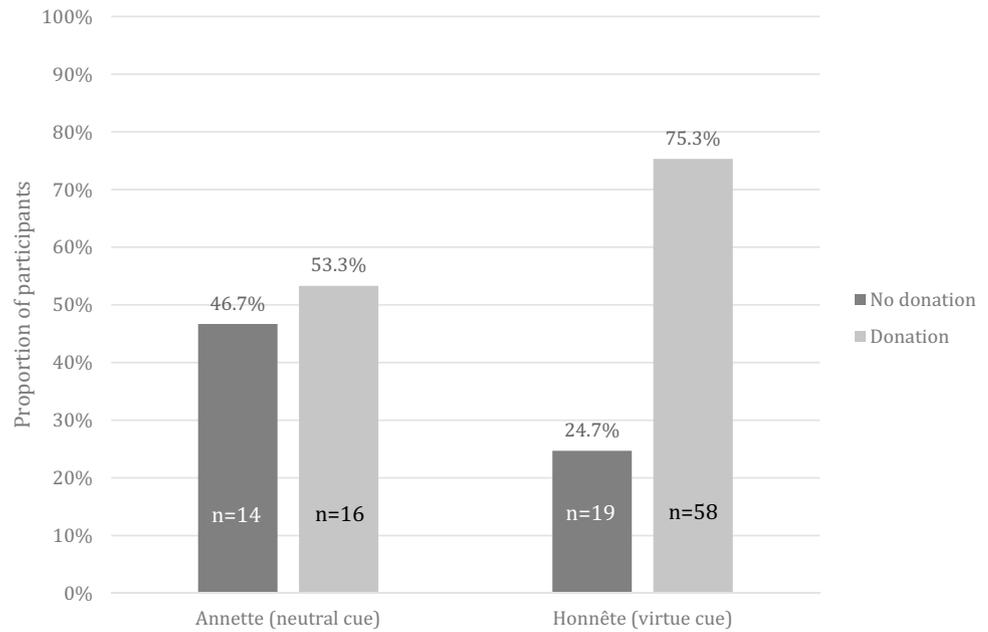
In all, 107 buyers participated in the study (45.8% men,  $M_{\text{age}} = 24.40$ ,  $SD = 10.73$ ). A cross-tab analysis revealed that the Honnête blend was selected ( $n = 77$ ) more often than the Annette blend ( $n = 30$ ). A total amount of 61 Euros was donated. Importantly, an analysis revealed that those who selected the Honnête blend (green brand with an explicit virtue cue) were significantly more likely to donate (78.3%) than those who selected the Annette blend (53.3%),  $\chi^2$  ( $df = 1$ ,  $N = 107$ ) = 4.90,  $p = 0.027$ ; see Fig. 5. The results confirm H3.

## Discussion

The results of Study 4 are twofold. First, they demonstrate that explicit virtue cues on green products are more likely to appeal to consumers. This adds to the research results by suggesting that consumers not only perceive green products as more virtuous than conventional products, they also prefer those framed or branded with a virtue cue. Second, the results suggest that the preference for green products explicitly marketed as green results in positive behavioral spillover, as participants were more likely to donate when they had selected a green product with an explicit virtue cue.

## General Discussion

Four studies examine the inherent virtuousness of green products. Studies 1 and 2 test the core prediction, that green products are perceived as virtuous, as past research has assumed but not directly tested. Whereas Study 1 tests implicit virtue associations of green products, Study 2 uses an explicit measure, to examine how the virtue of green products increases purchase intentions. Study 3 further

**Fig. 5** Green product choice and donation (Study 4)

tests the virtuousness of green products and documents the mediating role of positive emotions experienced during green product consumption: product virtue leads to positive emotions, which explains purchase intentions. Study 3 tests the importance of moral character, showing this trait to be a boundary condition, in that only those with medium and high valuations of moral character experience positive emotions when consuming green products. Finally, Study 4 offers evidence from a field study that consumers prefer green products framed as virtuous. Specifically, it shows that explicit virtue cues on green products (versus none) are likely to stimulate positive behavioral spillover, in that consumers are more likely to donate (another virtuous act) after selecting a product identified as virtuous.

Beyond the “market for virtue” effect, where CEOs pursue ethical causes, behaviors and marketing strategies to gain market share (Rhodes 2017), this research finds that certain products, specifically green products, are inherently virtuous, and identified as such by consumers. This confirms the lay assumption that “green is good.” Indeed, consumers perceive green products as virtuous, which results in positive product evaluations (i.e., purchase intentions) driven by positive affect (i.e., the virtue of green products makes consumers feel good). Importantly, virtue cues on green products can even result in additional virtuous consumer behaviors (i.e., donations). Just as social psychology research demonstrates that seeing others act pro-socially prompts prosocial behavior (Schnall et al. 2010), this research shows that interacting with green products (purchasing organic coffee) can also cue prosocial behavior (i.e., a donation).

This research confirms that virtue is at the heart of green product evaluations and extend the body of literature on virtuous consumption, green products, and their influence on self-concept (Sachdeva et al. 2015). It is found that explicit virtue cues on green products result in higher intentions to purchase but importantly, lead consumers to engage in more virtuous behaviors, suggesting a positive behavioral spillover effect for virtue-labeled green products. Thus, prior research on positive spillover effects in green consumption is extended by showing this effect to be true in another consumption context (Juhl et al. 2017 examined grocery purchases).

## Theoretical Implications

The results of the four studies provide interesting insights into the role played by morality in green product consumption. First, green products are indeed perceived as virtuous, which confirms the general assumption that green equals good. Furthermore, this work adds to research on the moral nature of consumption and eudemonic living (Deci and Ryan 2008; Franco et al. 2016), and on the importance of virtue as a consumption value for ethical and green products (Barnett et al. 2005). Specifically, this research shows that virtuousness and the importance of acting virtuously is an important consideration in green consumerism. This contributes to research into virtue theory (Arjoon 2000) and into the effect of green consumerism (Juhl et al. 2017). This research also supports the growing literature on the role of positive emotions and happiness in consumer wellbeing (Ryan and Deci

2001) and its importance in the consumption experience (Gilovich et al. 2015). By including virtue in the examination of green consumption, this research accounts for holistic gains a consumer may reap in the green consumption experience: personal gain, in addition to social and environmental gain. Thus, it provides a more detailed account of the drivers of green consumption. While consumers experience intrinsic rewards when they are exposed to green products (as per Amatulli et al. 2015; Sachdeva et al. 2015) this effect is amplified when they perceive green products as virtuous (i.e., when green products are explicitly marketed as virtuous). However, our results show that this effect is less likely to occur for consumers who place less emphasis on actively developing on their moral character. Consequently, the results further support the link between the importance consumer place on virtuousness and how their consumption choices are driven by the perceived virtue of products. By elucidating the relationship between inherent product virtue and positive affect, this research clarifies the drivers of green product evaluations (Hidalgo-Baz et al. 2017). Additionally, the relationship between green products, inherent virtue, and positive affect depends in part on the consumer's desire to act virtuously, including the importance they place on their moral character. As such, the study contributes to research examining how consumers negotiate and define their moral identity via consumption (Reed et al. 2007). Consumption virtue relates to a greater sense of self as well as a form of altruism, suggesting that ethical and green consumption speaks to the relationship between making the "right" consumption choices, respecting the moral self, and the importance of the consumer as a moral agent (Kozinets and Handelman 1998; Shaw and Shiu 2003).

In accordance with the positive spillover conceptual framework, this research shows that consumers appreciate green products because they experience positive affect when interacting with them. This is also consistent with virtue theory (Haidt and Joseph 2004): virtue and virtuous living relate to a good life and personal fulfillment. This research enhances understanding of how consumers seek to be virtuous, sometimes by acting in line with their own personal values and sometimes via product consumption, to better themselves. Furthermore, as research has suggested, consumers do act more positively once involved with green products (Juhl et al. 2017). This research proposes an additional reason for this, positive emotions, by showing the downstream effects of perceived product virtue (i.e., purchase intentions) and the importance of consumers experiencing positive affect when consuming green products. Virtuousness and positive affect are interdependent in green product consumption, as demonstrated here, supporting research on how good begets good (Andreoni 1990; Amatulli et al. 2005; Sachdeva et al. 2015).

A boundary condition for the uncovered effect is also provided, in that the importance of moral character can influence the effect of perceived product virtue via the degree of positive affect experienced. The more consumers value moral character, the more positive affect they experience, which explains why they perceive green products as virtuous. However, this effect does not hold for consumers who do not cultivate their moral character. As such, this research provides insights into for whom the positive spillover effect of perceiving green product virtue will resonate and further demonstrates the importance of morality in the consumption experience and as a segmentation basis (Trevino 1992).

## Limitations and Future Directions

The results of this research present some limitations, which can be addressed in future research. First, this research was conducted only in France and with relatively small samples—bigger sample sizes would add more clout to the conclusions presented here. It would be interesting and relevant to extend the work to other cultures and bigger samples, as moral belief and knowledge vary across cultures (Haidt and Joseph 2004). Research also suggests that spirituality and morality may also moderate perceptions of virtue and other ethical bases (Vitell et al. 2016). The intersection of religion, moral identity, and perceptions of virtue in green products appears a ripe avenue of research.

The research presented here tests the premise of the inherent virtue of green products and its downstream effects. One of the first limitations is that it was not possible to test the full scope of moral foundations (c.f. Graham et al. 2013). While the four-item measure to test product virtue is reliable, it is certainly not all-inclusive. Future research should seek to expand on the measure of product virtue. While this research presents results from non-food products, which are traditionally used when testing green product effects, it nonetheless presents a limited number of categories. Most of the products tested in this study were relatively neutral—face cream, sunscreen, and coffee. In addition, all were self-infiltrating products (i.e., cream is applied to the body and absorbed). It would be interesting to test the virtuousness of rugged products (versus those that are gentle, as per Luchs et al. 2010) or less self-related, more utilitarian products, such as garbage bags or napkins. This research did not examine the realm of vice and virtue products (Werthenbroch 1998), leaving an interesting avenue for future research. Past research has suggested that consumers tend to prefer products positioned as virtuous (Eskine et al. 2012), and perceive green products in vice categories (i.e., potato chips) as being of lower quality (Van Doorn and Verhoef 2011). It would be relevant to examine how product category or even consumption occasion (either virtuous or vice) may influence

the perceived inherent virtue of green products, and thus explain product evaluations.

Finally, the research presented here focuses on the positive behavioral spillover effect of green products explicitly marketed as virtuous. Study 4, as a field study, did not account for the potential alternative explanation of self-selection, in that more virtuous consumers were more naturally attracted to the virtue claim. Future research may consider examining other moderators capable of modifying this effect. For example, regulatory focus has been examined as a moderating variable influencing the perception of environmental appeals (Kareklas et al. 2012). Regulatory focus (Higgins 1998) is an interesting lens through which to examine the virtue of green products because this theory examines the motivations that drive consumers to achieve certain goals. Consequently, it may be assumed that self-focused virtue appeals on green products (i.e., being a better person) may resonate more with those in a prevention focus, whereas society-focused green product virtue appeals (i.e., taking care of the planet) may resonate more with consumers in a promotion focus. Likewise, materialism has recently been examined as a trait capable of influencing donations (Bock et al. 2018). The interaction between green product virtue and materialism is also a ripe avenue for research. Finally, because virtue is tested, social desirability bias is possible, although all the studies ensured total anonymity. Future research should control for this as a moderating variable.

## Practical Implications

The results of this research provide insights for green product managers and brands. Specifically, they suggest that to promote green products, marketing managers should emphasize the virtuous nature of green products, as this is likely to augment purchase intentions. The research provides an affirmative answer to the critical question: do green products benefit from being explicitly branded as virtuous? Managers should not hesitate to make a virtue claim (i.e., “goodness”) on green products, as this is more likely to activate purchase and positive behavioral spillover from consumers. For example, the French mineral water brand Vellemin and Froy markets itself as “virtuous water,” which may be a beneficial strategy for the brand and for society, because it may (a) augment sales and (b) encourage positive behaviors by consumers of the water. For example, these consumers may be more willing to speak positively about the brand and its virtue and to encourage market mavens to engage with non-consumers and convert them into product users. The positive behavioral spillover may also be beneficial for brands that wish to create and promote green initiatives, such as fundraising initiatives and donations to causes related to the

brand. For example, numerous firms now ask consumers to make charitable donations at the checkout (Giebelhausen et al. 2017). If the products consumers are purchasing are green and perceived as virtuous, this research suggests that consumers are more likely to donate. The fact that they perceive green products as virtuous may make consumers less defensive and more liable to participate in cause-related marketing by the brand (see Howie et al. 2018 for an examination of defensive denial). For example, recent research suggests that asking consumers explicitly to take responsibility for their consumption choices makes them uncomfortable and averse to the brand (as was the case for the Panera Cares program—see Eckhardt and Dobsha 2018). However, explicit statements on brands via virtue-related cues such as “goodness” and “honesty” may raise rather than question consumer’s moral identities, resulting in more positive brand interactions.

Overall, the research provides theoretical and managerial insights for marketers of green products. In particular, the results provide insight into (a) why certain green marketing appeals are more successful than others, (b) the importance of positioning green products as inherently virtuous, (c) the significance of positive emotions in the consumption of green products, and (d) how segmenting consumers based on the importance they place on morality can influence the positive emotions experienced during green product consumption.

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## Compliance with Ethical Standards

**Conflict of interest** All authors declare that they have no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Human and Animal Studies** This article does not contain any studies with animals performed by any of the authors.

**Informed Consent** Informed consent was obtained from all individual participants included in the study when applicable. In online studies, participants were informed of their anonymity, did not reveal personal details, and cannot have their answers traced back to them. All respondents could opt out when they wished. In the field study, participants were not informed of their participation, but no personal information was collected and there was no forced participation.

## Appendix 1: Visuals and Vignettes Used for the Studies

### Study 2: Face Cream

\* Glycerin is an excellent ingredient in face creams because it has hydrating properties that work by bringing water in the skin to the surface. As glycerin is a humectant, it retains water without any problem and keeps skin smooth and hydrated.

#### Conventional Condition

This face cream is made using synthetic ingredients, notably glycerin\*. The glycerin used in this cream was made using synthetic propylene.



#### Green Condition

This face cream is made using natural ingredients, notably glycerin. The glycerin used in this cream was made from glucose originating from cane sugar.



### Study 3: Sunscreen

This brand of sunscreen will be launched in spring 2017. Here is some information about the product and its ingredients.

#### Conventional Condition

Lakmé sunscreen is made by blending synthetic ingredients such as oxybenzene and retinol palmate with aloe vera and other processed ingredients.

#### Green Condition

Lakmé sunscreen is made by blending natural ingredients such as minerals and zinc oxide with aloe vera and other organic ingredients.

### Study 4: Coffee

MÉLANGE  
« HONNÊTE »

UN CAFÉ  
100% BIO



MÉLANGE  
« ANNETTE »

UN CAFÉ  
100% BIO



## Appendix 2: Measures

### Product Virtue

“In your opinion, this product seems...” (1 = completely disagree, 9 = completely agree).

Honest  
Virtuous  
Fair  
Righteous

### Purchase Intentions

“What is the probability that you would buy this...” (nine-point scale).

Unlikely—very likely  
Improbable—very probable

### Positive Emotions

When you think about the product you were shown, how do you feel? (1 = not at all, 7 = very much).

Happy  
Joyous  
Calm  
At peace

### Moral Character

Complete the following sentence: “In general, I consider myself to be someone who...” (1 = is not representative of me, 7 = is very representative of me).

...Does not pay attention to the good or bad sides of things when making decisions (r)  
...Thinks of ways to become a better person  
...Does not consider the effects that his/her decisions can have on other people (r)  
...Does not know why they behave in the manner that they do (r)  
...Thinks of ways to become a more moral/virtuous person  
...Takes decisions in the spirit of wanting to “do good”  
...Is not concerned with morals (r)  
...Is a moral/virtuous person  
...Does not usually do the right thing (r)  
...Is not an ethical person (r)  
...Believes they are acting according to good principles

...Is not a moral/virtuous person (r)  
...Is an ethical person  
...Usually does the right thing

Product greenness manipulation check (as per Gershoff and Frels 2015, 1 = completely disagree, 9 = completely agree).

This \_\_\_\_ deserves to be labeled ‘environmentally friendly.’

Purchasing this \_\_\_\_ is a good environmental choice.

A person who cares about the environment would be likely to buy this \_\_\_\_.

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