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THE EFFECT OF OBJECTIVE SELF-AWARENESS AND PRIMING
ON ENVIRONMENTAL AND ETHICAL BEHAVIORAL INTENTIONS

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ABSTRACT

Sustainability and social responsibility have become the center of attention in many business corporations. Instead of focusing solely on selling products, companies are increasingly concerned about the environmental impact of their products and desire to drive positive social changes. From a marketing perspective, one way to accomplish this goal is through encouraging consumers to engage in environmental friendly and ethical actions. The present research investigates how self-awareness (focusing attention on the self) and priming (prior exposure to a stimulus) affect consumers' intentions to engage in such behaviors. I theorize that the interplay of both factors will be especially impactful: self-awareness should increase self-evaluation and lead to more ideal behaviors, especially when guided by an environmental or ethical prime. However, an experiment revealed mixed support: self-awareness had non-significant effects while priming appeared to backfire and undermine environmental and ethical behavioral intentions. The implications of these findings for future research and the marketplace are then discussed.

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Chapter 1

Introduction

In today's business world, corporations increasingly consider sustainability a crucial part of success. The term sustainability originally referred to using resources in an enduring way to sustain them for our next generation. Now it also encompasses a social component, which is to take responsible actions that will benefit communities and facilitate positive social changes. One problem that companies face on the road to sustainability is post-consumer waste management.

A large amount of post-consumption waste still goes to landfill despite recycling efforts, and businesses have been criticized for overlooking the product afterlife (Benton, 2015). While the product lifecycle process consists of product development, introduction, use, and disposal, marketing has mainly focused on the first three parts of this process. This emphasis has arisen because the primary role of marketing is seen as increasing market share and revenue. Therefore, marketing efforts aimed at product disposal seem less connected to this purpose and, as a result, less emphasis has been placed on the last part of the product lifecycle. However, developing sustainable alternatives for disposing of a product not only helps minimize a company's negative impact on the environment, but also reduces costs in manufacturing, waste management and various forms of taxes. To this end, the role of marketing is expanding beyond advertising and selling to encompass management of products throughout the product lifecycle, including their disposal.

This sustainability shift has been accompanied by other efforts by businesses to engage in positive social changes. Marketing has historically focused on product features and benefits—for example, Dove soap was positioned as a cleansing bar and with advertising that emphasized its

ingredients and immediate benefits for the skin. In contrast, Dove is now calling on the public to change their view of women through “the campaign for real beauty” (Deighton, 2008). Other companies are following a similar route to actively engage in positive social changes and to encompass a social component in their marketing by either raising awareness of an issue or calling for action on existing problems.

Marketers have used various ways to encourage sustainable behaviors. Advertising is usually first used to raise awareness about a problem. Following the ads are often social media campaigns to engage consumers to discuss the problem. After problem recognition, marketing effort is shifted to providing solutions. In this stage, consumers are offered with pre-planned solution options. These options are usually innovative products or services that have an embedded sustainable or social element, such as products made of sustainable materials. The options could also be existing products with an extended benefit to the environment or the society. A good example of this is the TOMS the shoe company’s business model of giving one pair of shoes away for every pair consumers purchased. A few strategies have also been used to recycle end-life products from consumers. Trade-in programs are popular among companies making electronic products. Some businesses are also developing novel ways to encourage recycling, such as a smartphone app that can track recycling progresses and offer small rewards to incentivize continuing actions.

However, despite the marketing efforts put forth to encourage sustainable actions, the number of consumers who actually take such actions in their life is probably lower than what most people would expect. A report conducted by Deloitte revealed that although 95% of consumers surveyed indicated that they would buy green products, only 22% actually bought (2009). In other words, there exists a huge discrepancy among the consumers between knowing

what is right to do and actually taking actions. I realize a possible solution to this problem is to let consumers realizing this discrepancy themselves, that is, to create cognitive dissonance by allowing them to realize that what they are actually doing is different from what they claim to do, and then provide solutions to help reduce this discrepancy. Through reading literature, I found that the objective self-awareness theory (Duval & Wickund, 1972) serves as one of the mechanisms in this process to help people realize and reduce discrepancies. It will be interesting to see if this theory can be applied practically to help marketers fill in the gap between high problem awareness and low engagement.

Given this backdrop, the purpose of this thesis is to study how marketers can encourage consumers to take sustainable actions that are and beneficial to the environment or the society. My research will focus on examining the effect of objective self-awareness on discrepancy reduction and behavioral facilitation, and the use of priming to accentuate such effect.

Chapter 2

Literature Review

Self-awareness

Self-awareness was a term originally developed by Duval and Wicklund (1972) in their book, *A Theory of Objective Self-Awareness*. According to their theory, human consciousness is two-directional and can be focused on either the external environment or the self. Subjective self-awareness is defined as the state of being conscious of the surrounding environment, whereas objective self-awareness is the state of focusing the attention on the self. Subsequent researchers have further developed the process by which self-awareness affects behavior (Duval & Wicklund 1972; Wicklund 1979). When a person becomes self-aware, his attention will gravitate towards the most salient feature of the self. Self-evaluation then comes into play as the individual compares himself to the salient standards of correctness. He becomes more aware of the internal standards, which serves to highlight discrepancies between the ideal self and the actual self and between the current state and the standard of correctness, or socially valued thoughts and actions (Silvia & Duval, 2001). If there is a discrepancy between his current state and his ideal state (including the standard of correctness), he can choose to engage in actions to reduce the discrepancy.

One possible action is avoidance; i.e., choosing to avoid situations that will elicit further self-awareness. For example, Gibbons and Wicklund (1976) found male college students were inclined to avoid their own voices after a failed interaction with an attractive female, deliberately choosing to avoid becoming aware of the self. If the person is unable to avoid self-evaluation, he may directly deal with the discrepancy by acting in the direction of the ideal. For example, a person who described himself as punitive behaved punitively, becoming critical and aggressive

towards other people, while a person who described himself as non-punitive remained peaceful in situations with other people (Carver, 1975). Although people may sometimes behave in unethical ways when they can direct their attention away from themselves, it is particularly distressing to act in anti-normative ways when they are considering his ideal standards (Bersoff, 1999). People thus act in more prosocial ways when becoming self-aware.

Research shows that self-awareness also affects task performance. For example, Wicklund and Duval (1972) hypothesized that self-awareness would increase participants' effort to perform tasks. In an illustrative study, participants were instructed to hand-copy two stories written in a foreign language as quickly as possible in two five-minute intervals. To manipulate objective self-awareness, a mirror was present in the second interval in the experimental group. The level of task performance was measured as the total number of letters copied by each participant in each of the two five-minute intervals. Results indicated that, compared to participants in the control group, participants who were self-aware (i.e., in the mirror condition) copied more letters during the second interval.

Additional research supports this finding. For example, Geller and Shaver (1975) examined the amount of time needed by participants to complete a Stroop color-word test. Self-awareness was manipulated (via the presence of a mirror or camera), and words were manipulated as either self-relevant or neutral. Results indicated that self-awareness increased color-naming latencies, especially for self-relevant words—which is consistent with theorizing that self-awareness activates self-relevant and self-evaluative thoughts in memory. More recent research directly examined self-descriptive words: self-awareness led to more statements about the public aspect of the self, consistent with theorizing the activation of the ideal self and the

standard of correctness (Hofmann & Heinrichs 2002). Together, research suggests that objective self-awareness drives self-evaluation and performance change.

Another important consequence is that objective self-awareness leads people not only to act in ways that align with their own standards but also to act to conform to social norms. For example, researchers have found that objective self-awareness (via the presence of a mirror) led children to take less extra Halloween candy from a box (Beaman, Klentz, Diener & Svanum, 1979). Likewise, college students became more self-critical and less likely to cheat on tasks (Heine et al., 2008). That is, self-awareness leads people to act more correctly, as defined either by internal standards or social norms. If so, then objective awareness could also influence people to behave more ethically and to engage in environmentally friendly behaviors. More formally, I propose:

H₁: Objective self-awareness will increase the likelihood of engaging in *a*) environmentally friendly behaviors and *b*) ethical behaviors

Priming

Priming is a widely studied subject in psychology and is often used to influence people's cognition, affect, and behavior. The term priming originally referred to the effect that processing of a prior stimulus made the person more likely to recognize or respond to the same stimulus some time after (Bruner, 1957). There are two major categories of priming: conscious priming (in which participants are aware of the priming stimulus), and unconscious priming (in which participants are unaware). This study will focus on conscious priming and its effect on behavioral facilitation.

Germane to our theorizing, prior research has established effects of priming on environmental behavior. For example, Verplanken and Holland (2002) consciously primed

participants with environmental values in different ways (e.g., imagining a person with environmental values, inserting environmental questions into a survey). Results indicated that priming environmental values led participants to make value-congruent choices in unrelated tasks. The authors further noted that priming was only effective when environmental values were cognitively activated and central to one's self-concept (Verplanken & Holland, 2002).

Priming has also been shown to affect prosocial behavior. For example, Nelson and Norton (2005) primed students an ethical word category ("superhero") and found that this priming activated students' moral standards and made them more likely to respond ethically in ambiguous situations and to engage in volunteer activities. This work also found that both ethical and unethical priming helped reduce dishonesty (2005). In addition, Scaffidi et al. (2013) primed prosociality (via a scrambled sentence task) and found that individuals then responded more favorable when asked for donations and in a helping situation. Welsh and Ordonez (2013) further demonstrate that ethical priming (via a scrambled sentence task) influenced ethical decision-making (e.g., less cheating) through the activation of moral standards.

Together this research provides strong support that environmental or ethical priming will facilitate corresponding behaviors. Formally, I hypothesize:

H₂: Compared to a neutral control group, *a*) environmental priming will increase the likelihood of engaging in environmentally friendly behaviors and *b*) ethical priming will increase the likelihood of engaging in ethical behavior.

The Interplay of Objective Self-awareness and Priming

Of focal interest in the present research is the interplay of self-awareness and priming. Based on prior research, self-awareness is expected to increase self-evaluation against standards of correctness, either defined internally or externally via social norms (e.g., Heine et al. 2008).

However, individuals may be guided by a myriad of such standards – for example, standards of modesty, academic achievement, etc. – it is not clear which standards will come to the forefront and affect self-evaluation and, in turn, conformity with ideals. In that case, while self-evaluation might lead some individuals to behave in a more environmentally friendly manner, other individuals might shift their behavior in another direction that is unrelated to environmental behavior.

Priming, however, provides a potential resolution to this problem. It does so by exposing individuals to a prior stimulus that can be used to make a desired value salient to people. Thus, for example, priming an individual with environmental or ethical values should provide a direction for the effects of self-awareness by influencing the standards of correctness that then guide subsequent behavior. Looked at another way, if priming is the impetus for behavior, then self-awareness should enhance its impact by increasing self-evaluation against the standard made salient by priming.

Prior research showed mixed results for the relationship between priming and self-awareness. Dijksterhuis and Knippenberg (2000) found that participants who became self-focus had a greater ability to override behavioral effects of negative stereotypes activated through priming, theorizing that self-focus would reduce the effect of priming. Conversely, Hull et al. (2002) found that a heightened state of self-consciousness coupled with subliminal priming on anger stimuli, resulted in the highest increase of blood pressure in participants because the anger stimuli became more self-relevant to them in this condition. Wheeler et al. (2008) explained this difference in results by dividing self-consciousness into two separate terms—internal state awareness, the awareness of one's feelings and physiological states, and self-reflectiveness, or rumination regarding the self. They concluded that the magnitude of priming would reduce in

heightened internal state awareness (supporting Dijksterhuis and Knippenberg) but would enhance in heightened self-reflective state (supporting Hull et al.). In the studies discussed, the term that is most similar to the concept of objective self-awareness is self-reflectiveness, in which a person contemplates his present state. Therefore, it can be expected that people in a heightened objective self-awareness state will also consider the primed stimuli more relevant and salient to them, increasing the magnitude of their responses.

Hence, I hypothesize a two-way interaction such that priming will enhance the impact of self-awareness on relevant behaviors. More formally,

H₃: Objective self-awareness and priming will interact such that *a*) environmental priming enhances the impact of objective self-awareness on environmental behaviors, and *b*) ethical priming enhances the impact of self-awareness on ethical behaviors.

Overview

Figure 1 provides a theoretical framework for my theorizing. Priming is expected to enhance the impact of objective self-awareness on prime-relevant behaviors, and my theorizing tests this for environmental and ethical priming. (From this perspective, environmental and ethical primes and behaviors can be seen as conceptual replicates.) Moreover, Figure 2 provides a stylized graphic of my predictions in H₁—H₃: both self-awareness and priming are expected to have positive effects on behavior, with the effect of self-awareness enhanced in the presence of priming.

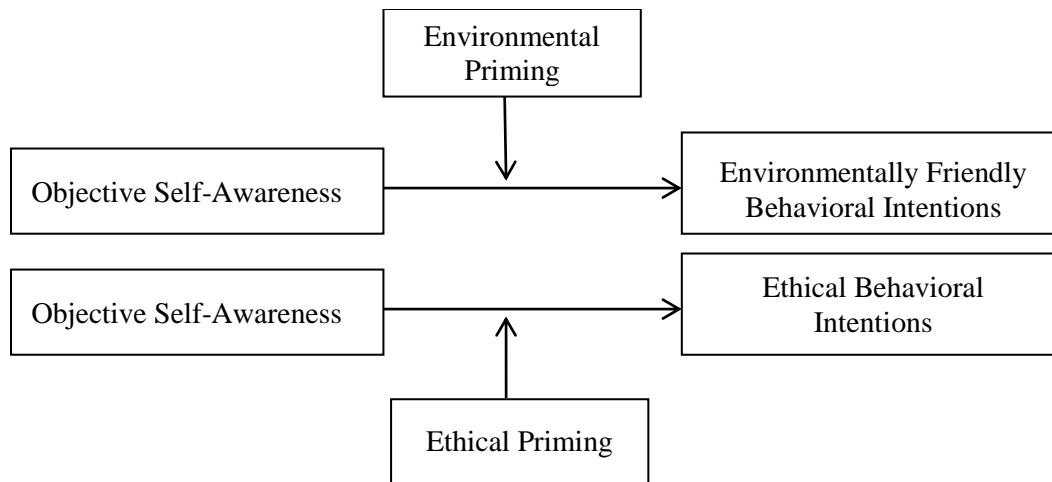


Figure 1. Conceptual Framework

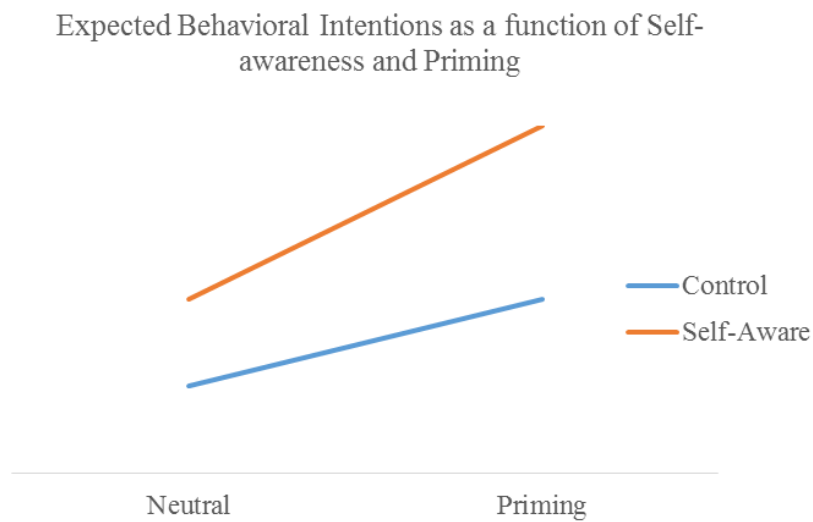


Figure 2. Merged Expected Behavioral Intentions as a function of Self-awareness and Priming

Chapter 3

Method

Participants

A total of 195 Penn State students participated in the study (Male= 93, Female=102). Among them, 42 were underclassmen and 153 were upperclassmen. 75% reported having involved in philanthropic activities or organizations, while 51% were involved in activities or organizations related to sustainability.

Design

The study implemented a 2 (self-awareness) x 3 (neutral, environmental, ethical priming) between-subject experiment design. Self-awareness was manipulated via the presence of a mirror and instructions guiding participants to look at themselves in the mirror during the task. Priming was manipulated by presenting participants with advertisements within which were embedded neutral, environmental, or ethical words. The dependent variables, environmentally friendly and ethical behavioral intentions, were measured as the average score of participants' rating of their likelihood to engage in specific environmentally friendly and ethical behaviors in the next week.

Procedure

Participants were instructed to complete a short survey study regarding their consumer preferences. In the first part of the survey, participants followed directions in the survey to evaluate two pairs of non-prescription eyeglasses. Participants in the self-awareness condition were instructed to try the eyeglasses on and evaluate how they look in a mirror, thereby increasing objective self-awareness. Participants in the control condition were also instructed to try on the eyeglasses, but a mirror was not provided. Next, all the participants were asked to

evaluate two advertisements for eyeglasses. The first ad was a neutral ad for all conditions (see Appendix B). Participants in the control condition reviewed another neutral ad (Figure 3). Participants in the environmental priming condition reviewed a second ad with words related to the environment (Figure 4), and participants in the ethical priming condition reviewed a second ad with words related to ethics (Figure 5). As part of the cover story, participants then answered some questions regarding the ads and eyeglass usage.

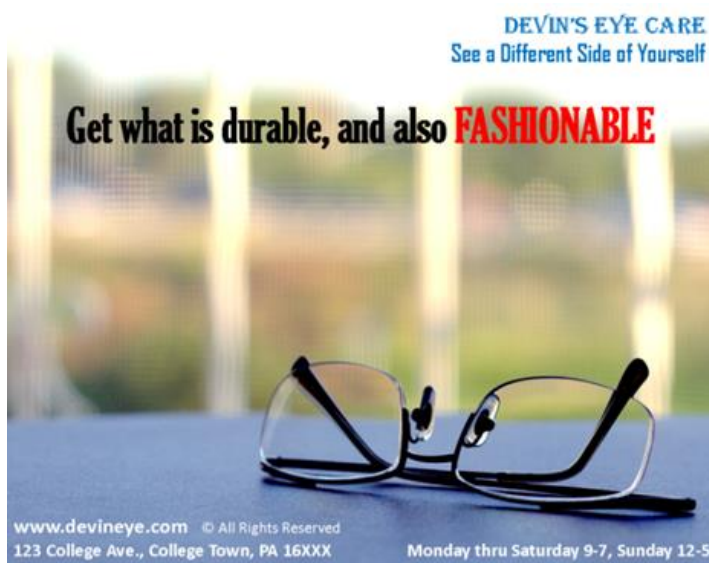


Figure 3. Neutral Priming Ad

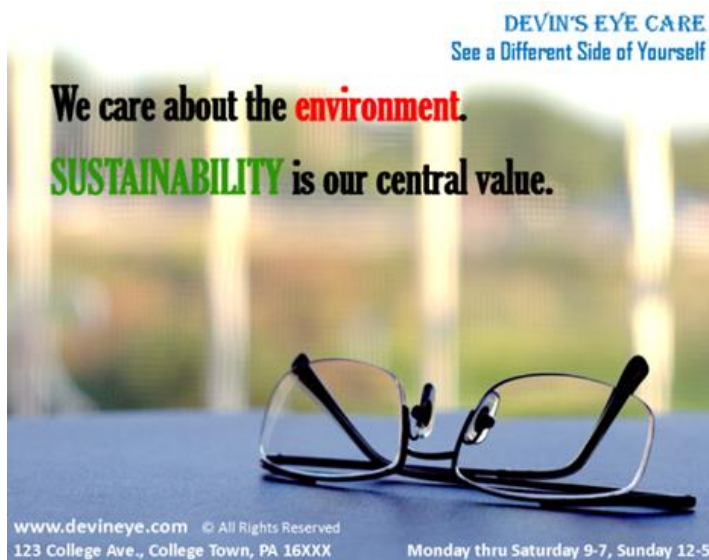


Figure 4. Environmental Priming Ad

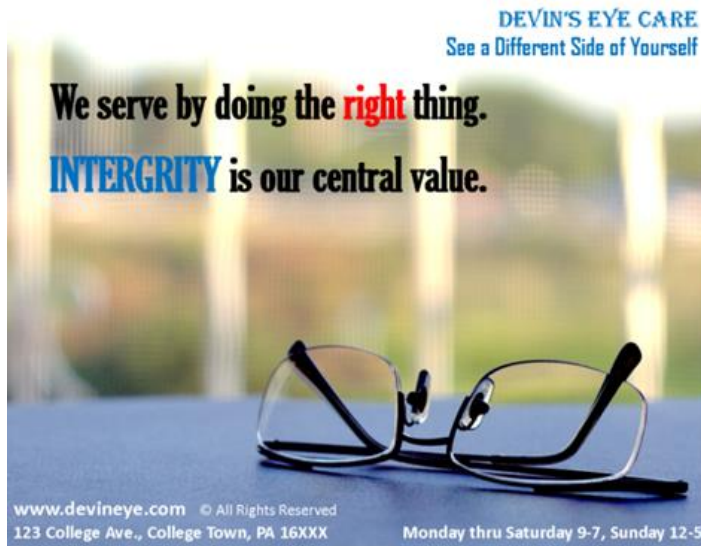


Figure 5. Ethical Priming Ad

In an ostensibly unrelated task participants then completed a survey that asked them to rate their intentions toward a set of eight environmentally friendly and eight ethical behaviors in the next week. Sample environmental items include: “buy a product that is made of recyclable material” and “reduce water consumption by showering less”. Sample ethical items include: “go upfront to help when you see a stranger is involved in an accident” and “ask a friend about ‘tips’ on an exam that you are about to take”. Participants responded on seven-point scales with endpoints range from very unlikely to do to very likely to do. Participants also indicated their environmental and ethical attitudes and responded to background questions such as demographics (details omitted for brevity). The exact wording of these measures is shown in Appendix B.

Chapter 4

Results

Analyses focused on two key indices: the environmental index and the ethical index, each based on the average response to the eight-item environmental and ethical behavioral likelihood measures, respectively. These dependent variables were first analyzed in omnibus ANOVAs as a function of self-awareness (present/absent), priming (neutral/ethical/environmental), and their two-way interaction. Subsequent analyses focus in on ethical and environmental priming separately.

Environmental intentions

For the environmental index, an omnibus ANOVA revealed no significant main effect for the self-awareness manipulation ($F < 1$), no significant main effect for the priming manipulation ($F(2, 189) = 1.78$, $p = 0.25$), and a non-significant interaction ($F(2, 189) = 2.02$, $p = 0.21$). Since the environmental prime was primarily expected to affect environmental intentions, a follow-up analysis focused on self-awareness and priming (neutral vs. environmental only). ANOVA again revealed no significant effect for self-awareness and neutral/environmental priming (F 's < 1); the interaction was directional but non-significant ($F(1, 127) = 2.46$, $p = 0.18$).

For exploratory purposes, the environmental index was factor analyzed and ANOVAs were conducted on each of the two factors that emerged: all effects were NS (details omitted for brevity). Interestingly, an analysis of individual items focusing on the first item ("How likely are you to buy a product that is made of recyclable material in next week?") did reveal a significant

two-way interaction ($F(1, 127)=5.54$, $p=0.02$); main effects for self-awareness ($F<1$) and neutral/environmental priming ($F(1, 127)=1.47$, $p=0.23$) were NS. As the pattern of means in Appendix A indicates, intentions increase as expected with environmental priming in the absence of self-awareness—but appeared to backfire when coupled with a self-awareness manipulation.

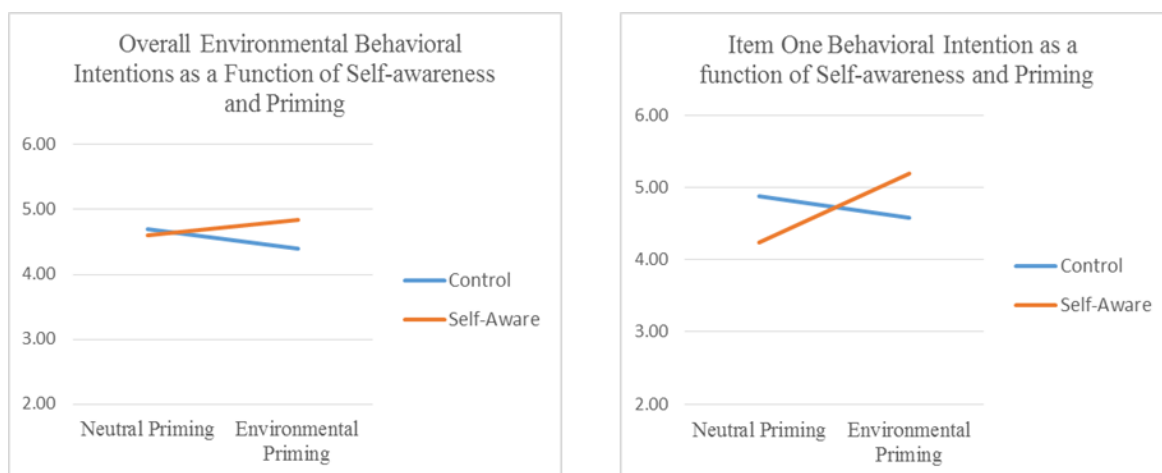


Figure 6. Overall Environmental (left) and Item One (right) Behavioral Intentions

Ethical intentions

For the ethical index, an omnibus ANOVA revealed non-significant main effects for self-awareness or priming ($F<1$), and a non-significant interaction ($F(2,189) = 1.83$, $p=0.16$). Since the ethical prime was primarily expected to affect ethical intentions, a follow-up analysis focused on self-awareness and priming (neutral vs. ethical only). ANOVA revealed non-significant effects for self-awareness and neutral/ethical priming (F 's <1) and a non-significant interaction ($F(1, 126) = 1.58$, $p=0.21$).

For exploratory purposes, the ethical index was factor analyzed and revealed three dimensions: donations (comprising two items), helping strangers (comprising two items), and

academic integrity (comprising four items). See appendix B for details. An analysis of the sub-indices revealed the following.

For donation intentions, ANOVA revealed significant main effects for self-awareness ($F(1, 126)=4.47, p=0.04$) and ethical priming ($F(1, 126)=4.47, p=0.04$); the two-way interaction was NS ($F<1$). As the pattern of means in Appendix A illustrates, the presence of self-awareness increased donation intentions (4.16 vs. 4.65), but ethical priming decreased donation intentions (4.65 vs. 4.16). In other words, becoming self-aware made participants more likely to engage in giving and donating behaviors, but priming with ethical words instead backfired.

For helping strangers, ANOVA revealed a main effect for neutral/ethical priming ($F(1, 126) = 4.97, p=0.028$); self-awareness and the interaction were NS ($F's<1$). Interestingly, ethical priming appeared to backfire and decreased helping intentions (5.56 vs. 5.11).

For academic integrity, ANOVA revealed a marginal interaction of self-awareness and ethical priming ($(F(1, 126) = 3.088, p = .08)$); main effects were NS ($p's > .25$). As the pattern of means in Appendix A indicates, ethical priming increased academic integrity intentions in the absence of self-awareness (3.39 vs. 3.94) but appears to backfire in its presence (3.57 vs. 3.26).

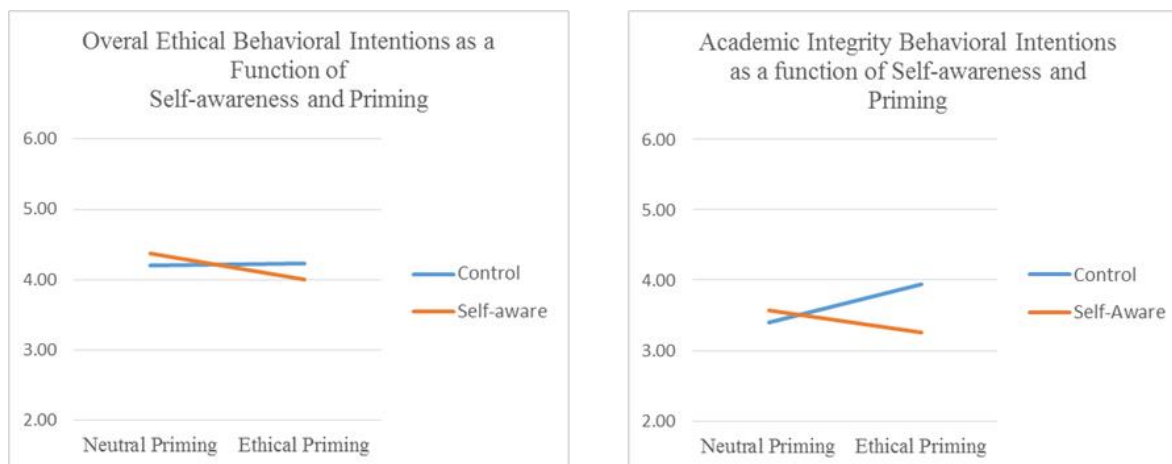


Figure 7. Overall Ethical (left) and Academic Integrity (right) Behavioral Intentions

Overall, these results provide mixed support for H₁ and H₂. For environmental intentions, self-awareness and priming manipulations had little impact. Limited evidence shows that environmental priming can have a positive impact on environmental intentions – but backfires when individuals are made self-aware. For ethical intentions, a similar pattern emerges for academic integrity intentions: ethical priming had a positive impact that reversed when individuals were self-aware. For donations and helping strangers, self-awareness had a positive or no impact on ethical intentions and backfired with ethical priming.

Chapter 5

Discussion

The purpose of this research is to test whether becoming self-aware and/or primed would make people more likely to engage in environmentally friendly or ethical behavior. The overall results indicate that becoming self-aware has limited effects on increasing such behavioral intentions, in contrast with prior research. One possible explanation for the disappointing effects of self-awareness may lie in the method of discrepancy reduction. Research on objective self-awareness shows that becoming self-aware makes people see themselves as more responsible for the discrepancies between their actual self and ideal self or normative standards, which in turn is a major driver for behavioral modification. However, some recent research suggests that when people are discrepant, focusing on the standard may also lead to a negative evaluation of the standard—that is, a change in the view of the standard rather than a change in the self toward the standard.

For example, Duval and Lalwani (1999) designed an experiment to deliberately create a discrepancy between participants' performance and the evaluation standard. They found that after becoming self-aware, participants who focused on their performance level attribute the discrepancy to themselves, leading to subsequent attempts to meet the standard. Focusing on the standard, on the other hand, made participants attribute the discrepancy to the standard and created a desire to change the standard later. These participants were also found to evaluate the standard more negatively than the participants who focused on their performance level (Duval & Lalwani, 1999). Since the present study did not manipulate to which causes participants would attribute their discrepancies, it is possible that some participants actively attempted to change the self towards the normative standard whereas others developed a negative attitude towards

behaving environmentally friendly or ethically—contributing to a null overall effect of self-awareness.

My overall results also indicate that environmental priming has no effect on changing environmental behavioral intentions while ethical priming tends to decrease ethical behavioral intentions. Verplanken and Holland (2002) found that priming environmental values made participants choose more environmentally friendly choices, but also noted that this effect would only work when the environmental values were central to the participants' self-concept. However, priming studies on prosocial behaviors did not find this limitation. Therefore, one possible explanation for the difference in results between environmental and ethical priming is that most people share many of the basic moral standards with others, but their attitude towards protecting the environment may be mixed. Indeed, three-fourths of the participants reported to have engaged in philanthropic related activities while only half of the participants have engaged in sustainability related activities. As a result, an effect of environmental priming may not have emerged due to the variation in environmental consciousness among participants. In contrast, ethical priming was more effective – but decreased, rather than increased, ethical behavioral due to participants' reactivity, which is discussed in detail in the following section.

Finally, there is some evidence supporting an interaction pattern such that priming accentuated the self-awareness effect. That is, the effect of objective self-awareness emerges more strongly with priming (and, conversely, the effects of priming emerge more strongly with self-awareness)—providing partial support for my theorizing.

Limitations

A limitation of this study, and of research on objective self-awareness more generally, is that self-awareness cannot be measured directly. Researches can only infer the state of objective

self-awareness from people's reactions to stimuli such as being in front of mirrors or cameras.

The present study also did not control for how carefully participants followed the instructions to try the eyeglasses on with a mirror provided and how long they spent looking at themselves in the mirror. As a result, whether participants truly become self-aware and their degree of the self-awareness state was unknown in this study. Moreover, a study by Fejfar and Hoyle (2000) revealed that being reminded of the self-discrepancies is unpleasant and often leads to negative views of the self. Therefore, the state of objective self-awareness is avoided whenever possible. In the present study, participants were asked to look at themselves in a mirror at the beginning, but had to view two advertising flyers and answer a series questions regarding eyeglasses before their behavioral intentions were assessed (see Appendix B). Such cognitive effort may distract participants from paying attention to the self, or simply the lag in time may provide them a chance to recover from the heightened self-aware state to reduce negative affect.

Another significant limitation of this study is the operationalized definition of the priming manipulation. In the studies of priming and its effect on behavioral modification, many researchers used the sentence completion task or similar tasks to elicit the priming effect. In these cases, participants consciously attended to the priming stimuli and even contributed to eliciting the priming effect in themselves. They either were not aware of the purpose of the priming task, or did not make an association between this task and the following tasks. However, in the present study, the priming stimuli were words on the advertising flyers and participants could easily associate the purpose of the flyers to the purpose of the study. In fact, when asked to guess the purpose of the study at the end of the survey, more than half of the participants answered that the survey was related to either ethics or the environment. This realization could create resistance in participants when answering the behavioral intentions questions. In future

work, the priming stimuli should be presented in less obvious ways so that participants are not aware of its purpose.

In addition to these two major limitations, other concerns may also limit the generalizability of the study results. First, sample selection is an issue, and it is an open question whether these results would generalize to non-college student samples, such as people in large age ranges and diverse education and social-economic backgrounds. Moreover, Heine et al. (2008) found that the presence of a mirror led Americans to be more self-critical but had no impact on Japanese participants. Therefore, generalizability across cultural background is also a concern. Second, the selection of measurement items and their content validity may also have created problems in the study. Eight items each were selected to assess environmentally friendly and ethical behavioral intentions, which may be insufficient to fully assess such intentions. Third, the study was administered to participants in a public setting, where they could see each other and were observed by some passing strangers. Although privacy screens were provided, participants may have felt some unease due to the public setting and noise level.

Implications and Future Research

The present research found that objective self-awareness failed to change behavioral intentions, possibly because participants have different causal attribution mechanisms to reduce the discrepancy realized between their actual state and the normative standard. Strategies may be used to direct people's attention to their performance level instead of the standard, for example, to make people aware of their performance potential. To the extent that people believe they can overcome a discrepancy, behavioral change is more likely to happen. For example, Rattan and Dweck (2010) found that simply telling participants that personality is changeable instead of fixed increased their willingness to confront a person who expressed prejudiced belief. To utilize

such an effect in the field of marketing, marketers could develop step by step campaigns to influence consumer behavior. For instance, if a tech company wants to encourage consumers to recycle digital products, it could first raise awareness about how recycling digital products is an important and socially desired behavior, making the belief salient to consumers. Then, strategies can be developed to heighten consumer self-awareness, such as taking a selfie to support a cause. And lastly, marketers should provide consumers with an actionable solution such as a trade-in program so that their perceived discrepancy will lead to a change in behavior instead of a change in the belief.

The present research also found that priming may have the potential to negatively influence environmentally friendly and ethical behavioral intentions. However, it would be premature to claim a role for priming as a tool in marketing to help promote desired behaviors. Prior research suggests that priming does have positive effects, and therefore future research is needed to better understand when priming will be ineffective or effective.

One contribution of the present research is that its results contradict prior work and therefore call for more research to resolve these contradictions. A conceptual replication of the study could be conducted that minimizes the limitations previously noted. In addition, other variables such as the direction of causal attribution could be introduced to test whether the discrepancy reduction is working in competing ways that contribute to null effects. With a better understanding of how self-awareness and priming work together, researchers will hopefully be able to find practical ways to harness these psychological mechanisms in the field of marketing to promote sustainability and social responsibility.

Appendix A

Result Tables

Table 1. Analysis of Variance (ANOVA) between Self-Awareness and Environmental Priming

	Overall Index		Sub Index 1 - Recycle		Sub Index 2 - Electricity		Item One	
	F	p	F	p	F	p	F	p
Self-awareness	<1	0.40	<1	0.45	<1	0.46	<1	0.96
Environmental Priming	<1	0.88	<1	0.65	2.80	0.10	1.47	0.23
Interaction	1.86	0.18	1.66	0.20	<1	0.33	5.54	0.02

Table 2. Marginal Means for Self-Awareness and Environmental Priming

	Overall Environmental Index			Sub Index 1 - Recycle			Sub Index 2 - Electricity			Item One		
	Neutral	Environmental	TOTAL	Neutral	Environmental	TOTAL	Neutral	Environmental	TOTAL	Neutral	Environmental	TOTAL
Control	4.70	4.39	4.55	4.41	4.23	4.32	5.56	4.89	5.23	4.88	4.58	4.73
Self-Aware	4.60	4.84	4.72	4.30	4.67	4.48	5.50	5.33	5.41	4.24	5.19	4.72
TOTAL	4.65	4.62		4.35	4.45		5.53	5.11		4.56	4.88	

Table 3. Analysis of Variance (ANOVA) between Self-Awareness and Ethical Priming

	Overall Index		Sub Index 1 - Donating		Sub Index 2 - Helping		Sub Index 3 - Academic Integrity	
	F	p	F	p	F	p	F	p
Self-awareness	<1	0.80	4.47	0.04	<1	0.47	1.09	0.30
Ethical Priming	1.11	0.30	4.47	0.04	4.97	0.03	<1	0.63
Interaction	1.58	0.21	<1	0.43	<1	0.41	3.09	0.08

Table 4. Marginal Means for Self-Awareness and Ethical Priming

	Overall Ethical Index			Sub Index 1 - Donating			Sub Index 2 - Helping			Sub Index 3 - Academic Integrity		
	Neutral	Ethical	TOTAL	Neutral	Ethical	TOTAL	Neutral	Ethical	TOTAL	Neutral	Ethical	TOTAL
Control	4.21	4.24	4.23	4.50	3.83	4.16	5.55	5.27	5.41	3.39	3.94	3.67
Self-Aware	4.38	4.00	4.19	4.80	4.50	4.65	5.57	4.95	5.26	3.57	3.26	3.41
TOTAL	4.30	4.12		4.65	4.16		5.55	5.11		3.48	3.60	

Appendix B

Sample Survey

*Self-Awareness and Environmental Priming Condition

Introduction

In this survey study, you will be asked to try some consumer products and answer a variety of questions about everyday consumer activities. The first part of the study asks you to experience and evaluate a specific product that a company is introducing. The second part of the study is a survey regarding your lifestyle and general attitudes and opinions. The survey takes about 15 minutes to complete. There is no right or wrong answers. I appreciate your thoughtful responses, whatever they may be. The survey is anonymous; we will not link your identity to any information in the survey. Thank you for your participation in the study!

Part 1: Consumer Evaluation

I. Product Evaluation

An eyeglasses store called Devin's Eye Care is considering introducing some new designs of eyeglasses in order to attract young adults and potentially open up a new consumer segment. You have been given two pairs of eyeglasses with designs similar to those of Devin's Eye Care's. Please take a look at them and try them on, using the mirror provided. Next, rate the attractiveness of these two pair of eyeglasses on the scales below.

Eyeglasses No.1

	1	2	3	4	5
Overall appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Color of the frame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shape of the frame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Size of the lenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Eye glasses No.2

	1	2	3	4	5
Overall appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Color of the frame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shape of the frame	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Size of the lenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

II. Advertisement Evaluation

In order to sell these new eye glasses, the marketing department of Devin’s Eye Care has come up with two versions of flyer ads that are to be distributed online and in areas highly populated by young adults. Please take a look at the first ad below, and complete the scale questions.



	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
This ad is attractive to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The color and design elements are appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The slogans are appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider buying a pair for myself if I see this ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend someone in need to buy a pair if I see this ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now, please take a look at the second ad below, and complete the scale questions.

DEVIN'S EYE CARE
See a Different Side of Yourself

We care about the environment.
SUSTAINABILITY is our central value.



www.devineye.com © All Rights Reserved
123 College Ave., College Town, PA 16XXX Monday thru Saturday 9-7, Sunday 12-5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
This ad is attractive to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The color and design elements are appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The slogans are appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider buying a pair for myself if I see this ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend someone in need to buy a pair if I see this ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

III. Consumer Preferences

Do you need to wear prescription eye glasses or contacts in your daily life?

- Yes
- No

How many pairs of non-prescription eye-glasses do you own? (excluding sunglasses)

- 0
- 1-5
- 6-10
- 11 or more

Imagine that you now need to buy a pair of eye glasses for yourself, rate the importance of the following items in terms of how they will influence your buying decision.

- _____ Brand
- _____ Price
- _____ Design
- _____ Frame material
- _____ Lens material
- _____ Durability
- _____ Warranty

Please indicate how strongly you agree with the following statements: Your answer is completely anonymous.

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
Everyone should take actions to protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People are free to choose whether they want to care about the environment or not	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people should behave in ways that are environmentally friendly, regardless of their attitudes about the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider the price of a product more importantly than how it is made	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When prices are similar, I will buy the product that is made with sustainable materials but is less attractive in design than another product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take into account the environmental aspect when making everyday life decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how strongly you agree with the following statements: Your answer is completely anonymous.

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
I would avoid cheating on exams in any circumstances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If other people are cheating, and I will be in a disadvantage if I do not, I will consider cheating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would avoid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

plagiarism in any circumstances					
I may break a rule if no one will know about it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will consider breaking a rule if I think the rule is unjust or unreasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more confident after I take actions that are ethical or helpful to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

II. Demographic Questions

How old are you? _____

Your gender

- Male (1)
- Female (2)

Your year at school

- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)

Do you live on campus or off campus?

- On campus (1)
- Off campus (2)

Back home, what area do you live in?

- City (1)
- Town (2)
- Countryside (3)

Have you or are your participating in any philanthropic activities or organizations, such as THON?

- Yes (1)
- No (2)

Have you or are your participating in any activities or organizations related to sustainability?

- Yes (1)
- No (2)

Congrats! You have almost finished the study! Just a few questions before you submit the survey:

In the study, I used a mirror when trying the eyeglasses on

- Yes (1)
- No (2)

In the study, my second ad piece was about

- Fashion (1)
- Integrity (2)
- Sustainability (3)

What do you think this survey is about?

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- Drive growth in organization from with 50 members to with 200 members

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