

GREEN THINK: HOW TO SELL SUSTAINABILITY
MARKETING, RELATIVITY, AND ENVIRONMENTAL SUSTAINABILITY

By

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Green Think: How to Sell Sustainability

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A thesis presented on environmentally sustainable consumer product choices based on decision-making theories.

ABSTRACT

This study utilizes the relativity theory, from behavioral economics, to evaluate impact of a ‘decoy’ product offering in a set of product choices on consumer evaluation and purchase intention of eco-friendly products.

Product categories tested include multipurpose cleaners (low involvement decision), denim jeans (medium involvement), and vehicles (high involvement). 310 respondents were tested. **The findings of this research indicate that the addition of a less-desirable “decoy” product offering has a positive effect on the overall evaluation and purchase intention of eco-friendly goods.** Further, this research is unique in finding that the addition of a less-desirable “decoy” product offering *also* has a positive effect on certain evaluation components of equivalent-quality competitor products.

This research provides a foundation to better market sustainably-produced goods at point-of-purchase displays (both virtual and physical), indicating that marketers can influence and increase consumer purchase of eco-friendly goods. Theoretically, this is a “triple bottom line” win: good for businesses (lower costs), consumers (safer products), and the environment (less waste and impact).

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GLOSSARY

Eco-Costs. “The environmental burdens associated with given product delivery systems- the *waste* and *wasting* that go along with *taking* and *making* products” (Fuller, 1999).

Eco-Friendly. Works in harmony with the natural environment, leaving little to no impact.

Decoy. A decision agent in a choice that is understood to be inferior compared to other choices (Ariely, 2008)

I=PAT. An equation developed by Ehrlich and Ehrlich (1990). I= Environmental Impact, P= Population, A= Affluence (per capita gross domestic product), T= Technology (resource conversion efficiency).

Pollution. “Any substance that adversely affects the physical, chemical, or biological quality of the earth’s environment or that accumulates in the cells or tissues of living organisms in amounts that threaten the health or survival of those organisms” (Kaufman and Franz, 1993).

Sustainable Consumption. Consumption practices that result in minimal to no impact on the ability of Earth’s natural resources to regenerate.

Sustainable Products. Products that have minimal to no impact on the ability of Earth’s natural resources to regenerate.

Sustainable Marketing. “The process of planning, implementing, and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies the following three criteria: (1) customer needs are met, (2) organizational goals are attained, and (3) the process is compatible with ecosystems” (Fuller, 1999).

The Relativity Theory. *From Behavioral Economics. The physiological human tendency to compare items in relation to other items. This tendency affects the way that humans make decisions (Ariely, 2008).

Win-Win-Win. “Outcomes in which customers win (obtain genuine benefits), organizations win (achieve financial and other objectives), and ecosystems win (functioning is preserved or enhanced) at the same time” (Fuller, 1999).

BACKGROUND

“Sustainable Marketing is not a pious exercise in corporate altruism. To the contrary, it challenges marketers to cope with a relentless issue- ecosystem degradation caused by consumption.”

-Donald A. Fuller (1999)

Pursuit of a Better Truth:

Science has often positioned its’ devotees in perilous straits; to be a scientific mind that is “ahead of the time” often brings persecution to genius and strategic study. The necessary foundation and unfortunate downfall of the sciences is the same; that to be awarded any credence they must be proven time and again by a collective group of intelligent minds. As is the nature of a collective group, consensus is a near impossible situation. Arguments persist in defense of the status quo, punishing and even eliminating the minds who seek a different “truth.”

But what is the foe that is allowed to conquer, to eliminate, factual-based ideology? In ancient times, theology halted progress with such ideas as an immovable Earth, facilitated by the Biblical Psalm 104:5 that decrees, “The Earth is firmly fixed; it shall not be moved.” The persecution of a science formulated by Copernicus that declared the opposite, in which Earth revolved around the sun, led to the stake burning of scientist Giordano Bruno and later threatened torture of the famous Galileo. “How silly,” we say, “Everyone knows of Earth’s orbit and circumnavigation around the sun!” Retrospectively, we think that we have escaped ignorance as we scoff at the shortsighted theories of ancient times.

But in modern times, we too are guilty of an endemic short-sightedness; that the Earth is replete with unlimited resources and will bear centuries of depletion. As in ancient times,

a differing form of theology has slowed scientific progress and has been a progenitor of this point of view; we know this theology by the name of “Industry.”

I would like to be clear that the research-supported views in this thesis do not negatively reflect upon Business (Industry) nor do they attempt to position this field as the enemy. Quite the contrary, this paper seeks to exalt Business, specifically the field of Marketing, as a possible savior of our previous short-sightedness and enabled protector of our natural resources.

The art of inquiry manifests itself in the perpetual pursuit of things unknown. Throughout our human history there have been many like Bruno with the ferocity to question the status quo, abandoning modern rationale for the pursuit of a better truth. Fortunately, no truth is complete, leaving much to the minds of daring successors. As generation after generation discovers, creates, and pursues these better truths, our human species and our societies are advanced and bolstered. In a new age of exploration, I succeed the minds before me who questioned a rationale of our modern society: that the world is made to serve man-kind. I seek a better truth; a truth that eliminates the barrier between ecological needs and business goals. I seek a truth that allows the powerful entities of this time, businesses, to **profit** from sustainable actions. As Donald Fuller expresses, “Sustainable Marketing is not a pious exercise in corporate altruism.” Sustainable Marketing is a tool that allows business managers to profitably conquer an issue that will not soon dissipate.

The Situation: *Why* Sustainability?

The Chernobyl disaster of 1986, the Exxon-Valdez oil spill of 1989 and the more recent Deepwater BP oil spill of 2010; all horrific accidents that brought to public attention the result of human action and industry. Events such as these have ignited the most passionate of activists, birthing a culture that abhors man-made creations of any kind,

even neglecting positive technological progress for the sake of environmental abstinence. A perpetual thorn in the side of many businesses, extreme activism has done little to promote an overall positive change within industry, excepting within the circle of activists themselves (in the Author's opinion). In defiance, businesses have pushed back, justifying industrial, environment-damaging actions as necessary to the survival of the financial economy upon which we depend. Failing to see eye-to-eye, each side has positioned themselves in defense against the other. But these constituents have not fully realized that a combination of these differing intentions can better serve the whole. Innovative business practices can meet environmental needs at a capacity that activists will be hard pressed to achieve. Furthermore, the development of such innovations can financially progress businesses with reductions in internal costs and increased longevity of stable resource inputs. It is not within the scope of this paper to illustrate the many techniques devoted to improving the bottom line and other business operations via sustainable initiatives (for more information see Epstein, M., & Roy, M. 2003), nor is it within the scope to prove beyond a reasonable doubt that man-made ecological change does exist and is a problem for businesses (for more info see Fuller, D. 1999). I do not seek to convince business managers that their company's' survival depends utterly upon the limited resources of land, water and minerals that we are rapidly depleting. Rather, **this paper seeks to better unite current business practices and goals with ecological needs through the successful marketing promotion of sustainably made products.**

LITERATURE REVIEW AND HYPOTHESES

“It was for good reason, after all, that the Ten Commandments admonished, ‘Neither shall you desire your neighbor’s house nor field, or male or female slave, or donkey or anything that belongs to your neighbor.’ This might just be the toughest commandment to follow, considering that by our very nature we are wired to compare.”

-Dan Ariely (Predictably Irrational, 2008)

I=PAT:

This thesis aims to contribute to research that suggests Marketing can and does have an impact upon environmental sustainability. An equation by Environmentalists Ehrlich and Ehrlich (1990) visually sequesters the most prominent activities that cause ecological stress. The equation, $I=PAT$, where I =environmental impact, P =population, A =affluence, and T =technology, makes a case for the (T) technology coefficient, the “current level of efficiency through which resources are converted into products and marketed to meet the needs of customers,” as having a significant impact on coefficient (I) . Whereas population and affluence are difficult to control, and are both unyieldingly increasing, the technology coefficient can be manipulated. This coefficient decides the relative efficiency at which production, marketing and consumption activities are carried out. So, as Ehrlich and Ehrlich say, “ (T) decisions can reduce costs”. Over the long term, if $T=0$, by the multiplicative properties of the equation, I will also = 0.

The Good News: Businesses AREN’T the Bad Guys!

There are many business managers who have come to understand the financial benefits of sustainable initiatives and, even without strong beliefs in scientific evidence that touts environmental caution, have begun to implement policies that reduce both environmental impact and business costs. For these business managers, sustainable operations are simply

good for business! With new cost-saving technologies such as solar panels, energy efficient light bulbs and heat-trapping building insulation, businesses are now able to justify green-supply-chain investment (Esty, D., & Winston, A. 2006). Further, many businesses are finding that offering eco-friendly products can become a competitive advantage (Esty, D., & Winston, A. 2006). As sustainable manufacturing moves from serving niche markets to becoming integrated into many businesses' core practices it seems as if the ecological war has finally been won!

But if the war is won, why have we not seen widespread financial and ecological success from these business initiatives? Many sources point to consumers, not businesses, as being the party hesitant to adopt these new technologies and "green" products. Surprisingly, businesses that have chosen to manufacture "green" products are having a difficult time selling these products to consumers (Zinkhan, G., & Carlson, L., 2013). The 1980s "green-washing" trend in the U.S. led consumers to mistrust green-marketing. In response to business' exploitation of consumer concern for environmental initiatives, the FTC set forth guidelines to protect consumers from being misled. These guidelines regulate the information conveyed to consumers on product packaging, in advertising and in the media (Guidelines for the use of Environmental Marketing claims, 2012).

However, evidence suggests that even with these guidelines in place there is still consumer confusion about environmental products and environmentally-friendly marketing messages. Consumers cannot easily identify environmentally friendly products and do not find green-marketing to be relevant or engaging (Pickett-Baker, J., & Ozaki, R. 2008). This has become a barrier for purchase of environmentally friendly products. Unless an effort is purposefully made by the consumer, most have little exposure to green-product knowledge and related advertising (Rand Corporation, 2004). So it seems that accessible information is a key problem for "green" product adoption. Literature relevant to this subject suggests that a belief construct made up of environmental knowledge, beliefs and intentions determines consumers' concern for the environment

(Dunlap, Van Liere, & Mertig, 2000). In dissecting the individual constituents of this belief construct, Mostafa (2007) concludes that environmental knowledge can be segmented into objective and subjective (perceived) knowledge. Further, previous literature explains subjective knowledge, versus objective, as being more important in determining consumer environmental concern and suggests that consumption behavior is more heavily affected when consumers believe that they have knowledge of environmental concerns, even when they do not (Ellen, 1994).

But, does an increase in information about environmental issues and products cause consumers to have a greater concern for the environment and increase their intent to purchase sustainable products? Plous (1993) explains consumer decision making as a process in which new information is interpreted contextually. Purchase decisions are influenced by many things including price, brand loyalty and past experiences (Plous, 1993). As consumers search for more information, products portrayed in an appealing context may win the race (Plous, 1993). The amount of information conveyed is less important than *how* the information is conveyed.

Relativity Theory:

Dan Ariely of Duke University is renowned for his exploration of decision making and information communication in the context of behavioral economics. Ariely explains the relativity theory as an innate tendency to compare, *everything* (2008). Not only do we compare, we compare items that can easily be compared and avoid comparisons that are too difficult (Ariely, 2008). As Ariely explains, we are “cognitive misers” that conserve our precious decision-making efforts (2008). When we are presented with too much information decisions become confusing. As a result, we tend to use a reference point to compare product offerings relative to other similar products. Relative product offerings, anchors, successfully influence consumer purchase decisions. Ariely’s research explores the idea of providing a “decoy” as a relative comparison in a set of product choices. In his book *Predictably Irrational* Ariely presents a decision: a honeymooning couple must

choose between Paris and Rome with a travel package that includes free breakfast,

“For most people, the decision between a week in Rome and a week in Paris is not effortless. Rome has the Coliseum; Paris, the Louvre. Both have romantic ambience, fabulous food, and fashionable shopping. It’s not an easy call. But suppose you were offered a third option: Rome without the free breakfast, called –Rome or the decoy. If you were to consider these three options (Paris, Rome, –Rome), you would immediately recognize that whereas Rome with the free breakfast is about as appealing as Paris with the free breakfast, the inferior option, which is Rome without the free breakfast, is a step down. The comparison between the clearly inferior option (-Rome) makes Rome with the free breakfast seem even better. In fact, –Rome makes Rome with the free breakfast look so good that you judge it to be even better than the difficult-to-compare option, Paris with the free breakfast.” – from Chapter 1, The Truth of Relativity

In application to sustainable marketing I hypothesize that consumers need decision anchors to aid in selection of sustainably-made products. This is contrary to the findings of other current literature that suggest more or better information about sustainable product features as an aid in selection of sustainably-made products. This thesis explores the following question: If marketers provide a “decoy” product will the evaluation and purchase intent of environmentally-sustainable products increase? In other words, will placing information about an eco-friendly product immediately next to information about a “decoy” product (a non-eco-friendly product of the same brand) boost the sale (selection) of the so-called more desirable product in a decision context with multiple product choices?

Hypotheses:

1) Consumers will evaluate ‘Brand A’ (high quality, eco-friendly) higher overall than equivalent quality ‘Brand B’ when decoy ‘–Brand A’ (low quality, non-eco-friendly) is amongst the purchase decision.

2) Consumers will rank (purchase intended) Brand A' (high quality, eco-friendly) higher than equivalent quality Brand B' when decoy 'Brand A' (low quality, non-eco-friendly) is amongst the purchase decision.

Implications:

This information provides a foundation to better market sustainably-produced goods at point-of-purchase displays (both virtual and physical). This is a 'Triple Win'; good for businesses (lower costs), consumers (safer products), and the environment (less waste and impact) (Fuller, 1999).

DATA, ANALYSIS, RESULTS

“Recognition that human activities are altering the ecosystems on which our existence—and that of all other living species—is dependent and growing acknowledgment of the necessity of achieving more sustainable forms of development give credence to suggestions that we are in the midst of a fundamental reevaluation of the underlying worldview that has guided our relationship to the physical environment.”

-Dunlap et. all (2000) on Milbrath, (1984)

Sample Description and Data Collection:

Data was collected by surveying 310 undergraduate students from an official University of Arizona Marketing testing pool throughout the months of November 2014-February 2015. The questionnaire was distributed by the researcher, self-administered by the students and collected by the researcher upon completion. The sample mean age is 21 years old.

The questionnaire was comprised of five parts: a prime, decision 1 (no “decoy” included), decision 2 (“decoy” included), NEP test for environmental concern, and demographics. The questionnaire was first reviewed by a panel of professors at the University of Arizona, one an expert in modeling and the other an expert in consumer behavior and decision making, before a final draft was approved for research.

Prime: To ready the respondents for the decision tasks they were introduced to one of 3 media influences: 'No Media,' in which respondents read a short article about celebrity Dwayne ‘The Rock’ Johnson, 'Media with Environmental Knowledge,' in which students read a short NASA article relating the current effects of global warming, and

'Media with Social Norm,' in which students read the same NASA article, with an additional sentence that illustrated actions others are taking to reduce environmental impact. Respondents were subsequently asked to indicate their understanding of the article as being relevant or irrelevant to environmental sustainability.

Decision 1: Respondents were then asked to evaluate two products from one of three product categories: multipurpose cleaners (low involvement), denim jeans (medium involvement) and vehicles (high involvement). The concept of product category involvement is extensively studied and measured by Judith Lynne Zaichkowsky (see Journal of Consumer Research article in the References section of this paper). The two products were labeled 'Brand A' (high quality, eco-friendly) and equivalent quality 'Brand B' (non-eco-friendly). Brand names, such as Clorox, Forever21 or Toyota, were not used so as to eliminate respondent bias. Respondents were given equivalent key statistics about each product choice and were able to clearly evaluate each product against the other. Evaluation of each product by the respondent was measured by a 5-point Likert scale with end points 1= 'I strongly disagree' and 5= "I strongly agree' for each question. The first question examined the respondents' positive or negative attitude toward 'Brand A' (high quality, eco-friendly). The second question measured respondents' opinion of 'Brand A' (high quality, eco-friendly) as a good product. The third question evaluated the respondents' willingness to own 'Brand A' (high quality, eco-friendly) if the need existed. These three questions were repeated for equivalent quality 'Brand B' (high quality, non-eco-friendly). Finally, respondents were asked to rank the two products in order of their purchasing preference with 1= Most Preferred and 2= Least Preferred.

Decision 2: Respondents were then given the exact same decision scenario, with the addition of a "decoy" product offering. This time, respondents were to evaluate "Brand A" (high quality, eco-friendly), equivalent quality 'Brand B' (non-eco-friendly) and inferior quality "-Brand A" (low quality, non-eco-friendly). The series of 3 questions described

above in *Decision 1* were asked for each of the brands. Finally, respondents were asked to rank the three products in order of their purchasing preference with 1= Most *preferred* and 3= Least Preferred.

New Ecological Paradigm (NEP) Scale: To evaluate respondents' endorsement of a 'pro-ecological' paradigm, 6 questions were administered from the most widely used measure of environmental views, the New Ecological Paradigm scale or NEP (Anderson, M. 2012). The NEP was developed in 1978 and revised in 2000 by US environmental sociologist Riley Dunlap and colleagues of Washington State University (Anderson, M. 2012). The NEP scale measures the move from a Dominant Social Paradigm (DSP) to a paradigm that reflects a greater environmental concern, the *New Ecological Paradigm* (Dunlap, R., Van Liere, K., Mertig, A., & Jones, R. 2000). Respondents indicate agreement with statements on a Likert scale of 1= 'I strongly disagree' to 5= 'I strongly agree'. Even numbered statements, if respondent agrees, indicate endorsement of the DSP. Odd numbered statement, if respondent agrees, indicate endorsement of the NEP. For the purposes of this study, the following 6 questions from the NEP scale were used:

1. When humans interfere with nature it often produces disastrous consequences.
2. Humans have the right to modify the natural environment to suit their needs.
3. Despite our special abilities, humans are still subject to the laws of nature.
4. The Earth has plenty of natural resources if we just learn to develop them.
5. If things continue in the present course, we will soon experience a major ecological catastrophe.
6. The so-called "ecological crisis" facing humankind has been greatly exaggerated.

Demographics: Respondents were asked, if comfortable, to indicate their age, gender, major, race and nationality.

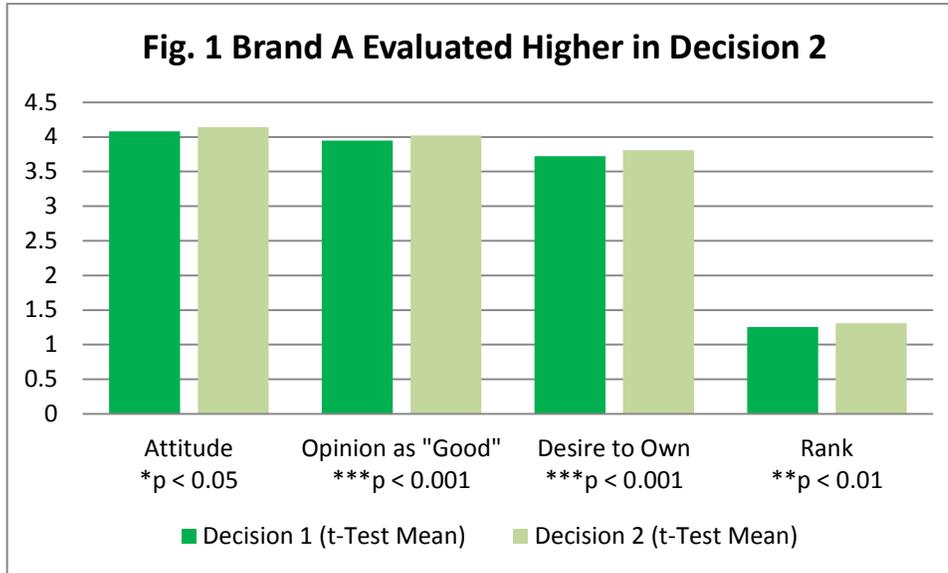
Analysis and Results:

T-tests and regression analysis were used to evaluate the results of data collection. T-tests

were utilized to evaluate hypotheses and regressions were used to analyze respondent evaluation of the brand product choices in the decision contexts against demographic variables (gender and major) and NEP score.

T-Tests: Results of the t-tests to evaluate the hypotheses are available in Table 1 and a visual depiction is provided in Figure 1. The null can be rejected for each of the hypotheses, as can be confirmed by the t-test values. The first t-test analyzes the change in attitude (positive or negative) toward 'Brand A' product (high quality, eco-friendly) against equivalent quality 'Brand B' product (non-eco-friendly) at decision Time 2 (addition of "decoy" product). The results are significant at $p < 0.05$ and show a mean value of 4.08 at Time 1 and a mean value of 4.14 at Time 2, indicating higher evaluation of 'Brand A' product (high quality, eco-friendly) in the second decision context. The second t-test analyzes the change in opinion of the product as 'good' for 'Brand A' product (high quality, eco-friendly) against equivalent quality 'Brand B' product (non-eco-friendly) at decision Time 2 (addition of "decoy" product). The results are significant at $p \leq 0.001$ and show a mean value of 3.95 at Time 1 and a mean value of 4.022 at Time 2, indicating higher evaluation of 'Brand A' product (high quality, eco-friendly) in the second decision context. The third t-test analyzes the change in desire to own for 'Brand A' product (high, quality eco-friendly) against equivalent quality 'Brand B' product (non-eco-friendly) at decision Time 2 (addition of "decoy" product). The results are significant at $p \leq 0.001$ and show a mean value of 3.72 at Time 1 and a mean value of 3.81 at Time 2, indicating higher evaluation of 'Brand A' product (high quality, eco-friendly) in the second decision context. The fourth t-test analyzes the change in ranking for 'Brand A' product (high quality, eco-friendly) against equivalent quality 'Brand B' product (non-eco-friendly) at decision Time 2 (addition of "decoy" product). The results are significant at $p \leq 0.01$ and show a mean value of 1.25 at Time 1 and a mean value of 1.31 at Time 2, indicating a higher ranking (1= Most Preferred) of 'Brand A' product (high quality, eco-friendly) in the second decision context. **These findings support H1 and H2.**

Table 1: t-Tests of 'Brand A' Evaluation				Mean (Time 1 Attitude)	Mean (Time 2 Attitude)	p (Two-Tail)
Attitude Time 1 x Attitude Time 2				4.080906149	4.139158576	0.031217452
Opinion as "Good" Time 1 x Opinion as "Good" Time 2				3.948220065	4.022653722	0.001819093
Desire to Own Time 1 x Desire to Own Time 2				3.721682848	3.812297735	0.0016434
Rank Time 1 x Rank Time 2				1.252427184	1.307443366	0.017046997

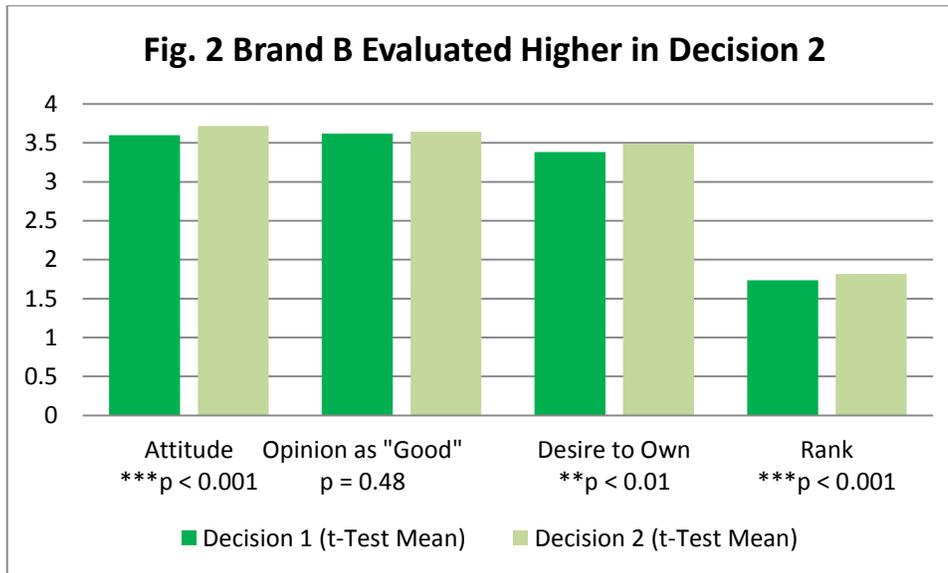


An unanticipated result was discovered with further analysis. A series of the exact same four t-tests (attitude, opinion of product as ‘good’, desire to own and rank) were run for ‘Brand B’. The results show that the addition of ‘–Brand A’ “decoy” significantly changes the evaluation of ‘Brand B’ product; attitude is significant at $p \leq 0.0007$ with a mean value of 3.6 at Time 1 and a mean value of 3.72 at Time 2, indicating a more positive attitude; desire to own is significant at $p \leq 0.002$ with a mean value of 3.38 at Time 1 and a mean value of 3.49 at Time 2, indicating greater desire to own; rank is significant at $p \leq 0.001$ with a mean value of 1.73 at Time 1 and a mean value of 1.82 at Time 2, indicating a higher ranking (1= Most Preferred) of ‘Brand A’ product (high quality, eco-friendly) in the second decision context. The results of these t-tests are available in Table 2.

This unanticipated result is a novel finding in this field of marketing research.

Ariely predicted, and proved, the existence of relativity in consumer choices and the tendency to increase positive evaluation of an item that is similar to a less-desirable “decoy” item. However, there is no research that indicates the tendency for consumers to *also* increase positive evaluation of an item that is of higher quality but not similar to the less-desirable “decoy” item in a decision set. This effect is seen and measured in this study. It is possible that higher involvement with the product decision in the second decision context lead consumers to better perceive differences in product attributes and importance (Zaichkowsky, 1985). This could indicate that consumers utilize the less-desirable “decoy” product to anchor their decision relative to both of the other products in the decision set, not only the product that is most similar to the “decoy”; consumers understand that both Brand A product and Brand B product are of higher quality than the “decoy” leading to a higher evaluation of both Brand products in the second decision set. This result has implications for managers and marketers who wish to realize the positive effect of product relativity in consumer choices. It will be important for managers to evaluate the effect that a “decoy” product may have upon their competitors’ products as well as their own. It is possible that the introduction of a “decoy” product will also increase evaluation of competitors’ products. However, this study shows, in the case of sustainable products versus competitors’ non-sustainable but equivalent quality products, consumer evaluation does not increase as high for competitors’ products and is not significant in the important evaluation category ‘Opinion as “Good”’.

Table 2: t-Tests of 'Brand B' Evaluation						
				Mean (Time 1 Attitude)	Mean (Time 2 Attitude)	p (Two-Tail)
Attitude Time 1 x Attitude Time 2				3.598705502	3.718446602	0.000783244
Opinion as "Good" Time 1 x Opinion as "Good" Time 2				3.621359223	3.644012945	0.486988325
Desire to Own Time 1 x Desire to Own Time 2				3.381877023	3.488673139	0.002362086
Rank Time 1 x Rank Time 2				1.734627832	1.818770227	0.001283906



Regressions: It is important to note the roles of NEP and gender in consumer evaluation of eco-friendly product choices. The following regression results are not to be associated with the relativity issue, explored via *t*-testing. Instead, the regressions explore the influence of gender, undergraduate major and prior ecological paradigm upon survey answers for each of the respondents.

Results of the regressions to examine respondent evaluation of the brand products in the decision contexts against demographic variables (gender and major) and NEP score are available in Table 3. The first regression, significant at $F=4.07 \times 10^{-8}$, analyzes average evaluation (average values of attitude, opinion of product as ‘good’, and desire to own for each respondent) of ‘Brand A’ product (high quality, eco-friendly) against average NEP score and demographic variables (gender and major) for each respondent. The results of this regression indicate that an environmentally-conscious view (average NEP score) affects respondents’ evaluation of ‘Brand A’ product (high quality, eco-friendly) at $p \leq 0.006$; gender is significant at $p \leq 1.31 \times 10^{-8}$; college major is insignificant at $p = 0.86$. The second regression, significant at $F=6.5 \times 10^{-6}$, analyzes attitude (positive or negative) of ‘Brand A’ product (high

quality, eco-friendly) against average NEP score and demographic variables (gender and major) for each respondent. The results of this regression indicate that an environmentally-conscious view (average NEP score) affects respondents' evaluation of 'Brand A' product (high quality, eco-friendly) at $p \leq 0.03$; gender is significant at $p \leq 4.29 \times 10^{-6}$; college major is insignificant at $p = 0.35$. The third regression, significant at $F = 3.44 \times 10^{-5}$, analyzes opinion of the product as 'good' for 'Brand A' product (high quality, eco-friendly) against average NEP score and demographic variables (gender and major) for each respondent. The results of this regression indicate that an environmentally-conscious view (average NEP score) affects respondents' evaluation of 'Brand A' product (high quality, eco-friendly) at $p \leq 0.0001$; gender is significant at $p \leq 0.0007$; college major is insignificant at $p = 0.99$. The fourth regression, significant at $F = 8.92 \times 10^{-7}$, analyzes the desire to own for 'Brand A' product (high quality, eco-friendly) against average NEP score and demographic variables (gender and major) for each respondent. The results of this regression indicate that an environmentally-conscious view (average NEP score) affects respondents' evaluation of 'Brand A' product (high quality, eco-friendly) at $p \leq 0.07$; gender is significant at $p \leq 7.38 \times 10^{-8}$; college major is insignificant at $p = 0.94$. The fifth regression, significant at $F = 0.02$, analyzes the ranking of 'Brand A' product (high quality, eco-friendly) against average NEP score and demographic variables (gender and major) for each respondent. The results of this regression indicate that an environmentally-conscious view (average NEP score) affects respondents' evaluation of 'Brand A' product (high quality, eco-friendly) at $p \leq 0.05$; gender is significant at $p \leq 0.03$; college major is insignificant at $p = 0.57$.

Table 3: Regressions of Evaluations, NEP and Demographics					
			p (NEP)	p (gender)	p (major)
Average Evaluation			0.006649332	1.31473E-08	0.856428505
Attitude			0.031263813	4.28504E-06	0.353554339
Opinion of product as "Good"			0.000173607	0.000743182	0.985735357
Desire to Own			0.074865201	7.38269E-08	0.939912203
Rank			0.05703396	0.030624603	0.573790283

DISCUSSION AND CONCLUSION

“Only within the moment of time represented by the present century has one species -- man -- acquired significant power to alter the nature of the world.”

-Rachel Carson, Silent Spring (1962)

Discussion:

The findings of this research offer implications to marketers and businesses managers who wish to promote consumer purchase of environmentally-friendly products. The results suggest that the addition of a less-desirable (non-eco-friendly) “decoy” product, as a relative comparison, in a set of product choices leads consumers to evaluate an eco-friendly product of the same brand more positively than other options, including an equivalent quality product of a different brand. This implication is true for all levels of consumer evaluation including positive attitude, opinion of the product as ‘good’, desire to own and ranking as “Most Preferred” for purchase. As hypothesized, the application of the relativity theory (from behavioral economics) in sustainable product purchase decision works to make a purchase decision easier for consumers. By offering consumers a relative comparison, an anchor, they are able to better evaluate product offerings. In this situation, consumers are more likely to choose the eco-friendly offering of the brand that presents the information anchor, increasing sales of this brands’ eco-friendly product even above competitors’ equivalent product offering!

However, analysis indicates a notable spillover effect. When the ‘Brand A’ “decoy” product is offered in the purchase decision, the attitude evaluation, desire to own and rank of equivalent quality ‘Brand B’ (non-eco-friendly) also increases, but to a lesser extent than the increases seen in evaluation of ‘Brand A’ (eco-friendly). It is possible that the “decoy” product increases consumer attitude evaluation, desire to own and rank of

both 'Brand B' and 'Brand A' because they are able to more easily note a difference in quality between equivalent quality 'Brand B' and 'Brand A' versus inferior quality '-Brand A'. Considering this, managers should take care to evaluate the level at which evaluation of competitor 'Brand B' will increase in comparison to their own companies' 'Brand A'. However, consumers' evaluation of the product as 'good' does not increase for 'Brand B' in a purchase decision that includes a '-Brand A' "decoy". This indicates that the addition of '-Brand A' "decoy" *increases* consumer evaluation of 'Brand A' as a good product, even compared to equivalent quality 'Brand B'. This is great news for marketers and business managers who wish to differentiate their companies' eco-friendly product offerings against competitors; the addition of a "decoy" product helps consumers to evaluate the eco-friendly product to be better than equivalent quality competitor products!

Finally, it is important to understand which consumers are more likely to positively evaluate eco-friendly products. Consumers who have a view (a paradigm) that is ecologically conscious, as tested with the NEP, are more likely to positively evaluate (overall, attitude, opinion of product as 'good', desire to own and rank) eco-friendly 'Brand A' compared to other product options. Females are also more likely to have a view consistent with the NEP and to positively evaluate (on all evaluation dimensions) eco-friendly 'Brand A' compared to other product options. This finding implies that marketers should target female consumers with the marketing strategy presented in this study (introduction of a "decoy" product).

Conclusion:

To those Business managers, owners and marketers who have realized the benefits of sustainable marketing, I applaud you. I hope that this study will be of service to your efforts, whether they be based in financial incentives or environmental concern, to promote the purchase of eco-friendly products. To future researchers, this study provides a foundation upon which to progress the understanding of "thinking green"- I encourage the continued effort. Let's help consumers to *decide to Think Green!*

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APPENDIX A:

Questionnaire Example (Condition 1 of 9)

Welcome to the decision-making study!

Thank you for participating!

Please make sure that you have eliminated distractions including cell phones while completing this study.

The study will take approximately 20 minutes.

Your responses are anonymous and will be kept strictly confidential for academic research purpose only.

Please proceed to the next page when you are ready to begin.

**WHEN YOU HAVE COMPLETED EACH PAGE PLEASE DO NOT RETURN TO IT
OR CHANGE YOUR ANSWERS.**

SECTION I

Please read the following short news article about Dwayne Johnson's new movie, "Hercules: The Thracian Wars". You will answer several questions about this article in the later part of the questionnaire.

Dwayne "The Rock" Johnson recently played the lead role in the movie "Hercules: The Thracian Wars". To prepare for the role Johnson ate seven full meals a day, including more than three pounds of meat and "1 cup Nemean Lion blood" as he jokes on Twitter. Additionally, he spent 6 months training 6 days a week, two times a day. The role required 3 hours of make-up every morning meaning that he often had to make time in the wee hours of the morning to begin his grueling routine. If the movie doesn't speak for itself, it seems as if Johnson has created in himself a real-life Hercules!

WHEN YOU HAVE FINISHED READING, PLEASE PROCEED TO THE NEXT PAGE.

SECTION II

Please answer the following questions about the article that you read in Section I.

Indicate your degree of agreement with these statements:

	I strongly disagree	I tend not to agree	Neutral	I tend to agree	I strongly agree
The article contained information that provided knowledge about human impact upon the natural environment.	<input type="checkbox"/>				
The article provided evidence that some people are working to reduce human impact upon the natural environmental.	<input type="checkbox"/>				

SECTION III: Please read the descriptions of three products VERY carefully and answer the questions based ONLY upon this information.

The following is the report by Consumer Reports on the key characteristics of three new cars of model year 2105. "Overall" is the overall rating of style, comfort, space and handling.

In Consumer Reports, these cars belong to the same price bracket (MSRP \$20,000 to \$25,000).

Brand A (Hybrid Engine)

Consumer Reports:

- Overall: 8.5
- Eco-Friendly Hybrid Engine
- 51 mpg city/48 mpg highway
- Spacious interior
- Sporty style

Brand A (Gas Engine)

Consumer Reports:

- Overall: 5.2
- 4 cylinder gasoline engine
- 28 mpg city/37 mpg highway
- Minimal interior space
- Standard design style

Brand B (Gas-Engine)

Consumer Reports:

- Overall: 8.5
- Fuel Efficient gasoline Engine
- 36 mpg city/ 39 mpg highway
- Spacious interior
- Sporty style

Questions:

Indicate your degree of agreement with these statements about **Brand A (Hybrid Engine)**:

	I strongly disagree	I tend not to agree	Neutral	I tend to agree	I strongly agree
My attitude toward the car is positive.	<input type="checkbox"/>				
I find the car to be a very good product.	<input type="checkbox"/>				
If I have the need, I would like to own the car.	<input type="checkbox"/>				

Indicate your degree of agreement with these statements about **Brand A (Gas Engine)**:

	I strongly disagree	I tend not to agree	Neutral	I tend to agree	I strongly agree
My attitude toward the car is positive.	<input type="checkbox"/>				
I find the car to be a very good product.	<input type="checkbox"/>				
If I have the need, I would like to own the car.	<input type="checkbox"/>				

Indicate your degree of agreement with these statements about **Brand B (Gas Engine)**:

	I strongly disagree	I tend not to agree	Neutral	I tend to agree	I strongly agree
My attitude toward the car is positive.	<input type="checkbox"/>				
I find the car to be a very good product.	<input type="checkbox"/>				
If I have the need, I would like to own the car.	<input type="checkbox"/>				

If you had the need to purchase a car, rank the following in order of your preference (1= Most preferred, 2= Preferred, 3= Least preferred):

Brand A (Hybrid Engine): _____

Brand A (Gas Engine): _____

Brand B (Gas Engine): _____

SECTION IV

Indicate your degree of agreement with these statements about the **natural environment**:

	I strongly disagree	I disagree	Neutral	I agree	I strongly agree
1. When humans interfere with nature it often produces disastrous consequences.	<input type="checkbox"/>				
2. Humans have the right to modify the natural environment to suit their needs.	<input type="checkbox"/>				
3. Despite our special abilities, humans are still subject to the laws of nature.	<input type="checkbox"/>				
4. The Earth has plenty of natural resources if we just learn to develop them.	<input type="checkbox"/>				
5. If things continue in the present course, we will soon experience a major ecological catastrophe.	<input type="checkbox"/>				
6. The so-called "ecological crisis" facing humankind has been greatly exaggerated.	<input type="checkbox"/>				

SECTION V

The following are questions about you. Please answer accurately, as all answers will be kept confidential and be used strictly for research purposes.

Age (in years): _____

Gender: Male Female

Major: (Choose all that Apply)

- Accounting
- Business Administration
- Business Economics
- Business Management
- Entrepreneurship
- Finance
- Management Information Systems
- Marketing
- Operations Management
- Other

Which of the following best represents your racial or ethnic heritage? (Choose all that apply):

- Non-Hispanic White or Euro-American
- Black, Afro-Caribbean, or African American
- Latino or Hispanic American
- East Asian or Asian American
- South Asian or Indian American
- Middle Eastern or Arab American
- Native American or Alaskan Native
- Other

What is your nationality (i.e., which country issued your passport)? (Check one)

- U.S. or Canada
- Brazil, Russia, India or China
- Mexico
- Other

You have now completed the survey. Thank you!!