Moral Licensing and Environmentally Friendly Green Behaviour: Why People Go Green

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ABSTRACT

Environmental degradation has gained significant mind-share in the past decade, and with it has come an increase in the overall frequency with which individuals perform environmentally friendly acts (EFAs), such as purchasing eco-friendly products. The purpose of this research is to broaden the understanding of the social evaluations of (and motivations behind) EFAs, their correlates, and the effect that performing an EFA has on future behaviour. Results indicate that individuals performing EFAs are evaluated more positively than those who do not, that individuals performing Environmentally Unfriendly Acts (EUA) are evaluated more positively if they also perform EFAs– regardless of whether the EFA and EUA are related, and that the monetary cost is unrelated to the evaluation of EFAs. Being an 'Eco-Optimist' was shown to affect the evaluation of EFA offsetting behaviour, while being an Eco-Pessimist and one's age was found to affect evaluation of EFA unbounded offsetting behaviour.

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INTRODUCTION

Industrialized nations have enjoyed unprecedented rates of growth and development since the start of the Industrial Revolution (Hart, 1997; Kuznets, 1966). As the population moved from rural to metropolitan areas and expanded, the need for more products and services grew as well. Given the environmental knowledge of the times, the vast demand, and shortage of substitutes in the pre-global economy, this development proceeded largely without much forethought or concern as to the global environmental impact of activities (Hart, 1997). This has now changed (Finisterra do Paço, Barata Raposo, & Filho, 2009; Hart, 1997), and over the past decade both climate change and environmental degradation have become two of the most widely discussed issues (Abeliotis, Koniari, & Sardianou, 2010; Archer, Kozak, & Balsillie, 2005).

The increased concern surrounding human impact on the environment has led to increased demand for environmentally friendly products and services (Lockie, Lyons, Lawrence, & Mummery, 2002), although the reasons for this shift in demand may not be as transparent as they seem. While there have been notable ideological shifts concerning the instability of the global environment, as well as our ability to cause harm through negligence and unchecked practices, altruistic concern for the environment may not be the only reason people engage in environmentally friendly behaviour (Schultz & Oskamp, 1996). Some studies have demonstrated that consumers will not purchase a product simply for its environmental friendliness; it must perform similarly to, or better than, its conventional substitute while being of equal quality and price for the average consumer to purchase it (Cotte & Trudel, 2009; Webb, Mohr, & Harris, 2008; Young, Hwang, McDonald, & Oates, 2009). In a sense, the environmental friendliness becomes

somewhat of an 'added value'. This demonstrates that while people are aware of the need to slow, and possibly reverse, global environmental instability, their personal satisfaction and comfort still comes first. It has also been shown that, if the criteria above are met, consumers will pay an average premium of 10% for environmentally friendly goods; however, they will demand an even larger rebate for environmentally unfriendly products (Cotte & Trudel, 2009). It would seem that people now want to be environmentally conscious, but this want is weighed against other wants – and depending on the weights given to different evaluation criteria in the moment, the decision is still very much one of convenience. Additionally, studies suggest that there is value in *appearing* to support a cause (Griskevicius, Tybur, & Van den Bergh, 2010), which may explain why individuals demand a larger rebate for non-environmentally friendly goods. Being denied the option to 'do good' has a cost to the consumer; consumers seemingly wish to exchange their moral loss into a tangible currency, and transfer that loss to the seller in the form of a monetary discount.

Hopkins and Roche (2009) reported that despite the recent economic downturn consumers still consider 'green' when shopping, but that now the focus is on saving money. Also reported was that the greatest obstacle to considering green products was not the cost but rather a lack of information about green alternatives, as well as the rampant fear of companies making misleading claims or insinuations about the environmentally friendly attributes of their products – commonly known as 'greenwashing'. By attempting to paint products and services as greener than they are the brand credibility of the individual product, as well as that of the environmentally friendly product category, is diminished as a whole. It is not surprising then that Shrum,

McCarty, and Lowrey (1995) found that green consumers are careful shoppers who seek product information, but at the same time are skeptical of advertising. As such, the use of third party labeling by experts is seen as a good alternative to improve credibility, assuming that the experts are seen as objective (Archer et al., 2005; D'Souza, Taghian, Lamb, & Peretiatko, 2007). Recently the greenwashing issue has begun to come full circle, as producers and marketers must now delicately balance the desire to educate buyers about the environmentally friendly benefits of their product with the understanding that 'screaming green' might result in distrust and being perceived as 'greenwashers'. Finally, the report found that product category and perceived benefits are two main factors in determining whether a buyer will pay more for a green product. This is of particular importance to marketers, as it indicates that there may be certain types of products that are more resilient to the effects of greenwashing. This may result from the link between a product's attributes and the environmental claims made about them being more intuitive, and so the consumer may feel more comfortable making that particular green purchase because they understand how the product helps the environment.

Several studies have examined the process that consumers go through when deciding whether or not to buy green, with varied conclusions. Young et al. (2009) found that consumers go through five sequential stages of evaluation when deciding whether to potentially make environmentally friendly purchases: 1) general green values and knowledge; 2) green criteria for purchase; 3) barriers and facilitators; 4) product purchase; and 5) feedback. This cycle partially explains why certain people may hold certain beliefs but not act on them. Paramount in this finding was that every time a

person goes through this cycle and decides whether or not to make a green purchase, they are creating a sense of environmental guilt or pride within themselves. Other research (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997) found that specific consumer beliefs predicted certain green buying variables as well as general environmental attitudes, which may moderate the degree of environmental guilt or pride experienced. Additionally, Kim & Choi (2004) found that culture also influences green purchase behaviour, as individuals from a collectivist background have stronger beliefs about consumer effectiveness. Also reinforced in this study was the finding by Schlegelmilch, Bohlen, and Diamantopoulos (1996) of a direct relationship between environmental concern / consciousness and green purchase behaviour.

Research into environmentally friendly consumer behaviour is relatively new, and to date much of it has focused on what characteristics define a 'green consumer' and what motivates their purchase behaviour. To acquire this knowledge would give green marketers the opportunity to reach their target markets with new levels of precision, and by inference increase profits dramatically. This would be both timely and welcome, as there seems to be little remaining denial of the need to stem environmental degradation, and consequently the forces of the market economy will undoubtedly continue to shift demand towards more environmentally friendly options. Implicit in the majority of related studies has been the search for what motivates alignment among stable environmentally conscious attitudes and belief structures, potential moderators, and associated purchase behaviour. In the gold rush to find "The Jade Vitruvian Man", there has been relatively little research done on incongruent green environmentally friendly behaviour and its relevant motivational correlates. By examining recent research on

moral licensing and moral compensation, it is possible that new and more predictive relationships underlying the motivation behind performing Environmentally Friendly Acts (EFAs) may be uncovered. It is expected that the purchase of a product with an environmentally friendly component serves as an added value that is both personal and social in nature. It is predicted that: 1) the 'green' added value, which is converted into a moral currency, can be laundered to pardon morally questionable acts in either the past, present, or future; 2) there are rules to how the value is appraised, and that this value depreciates over time; and 3) that the strength of one's pre-existing ecological worldview, gender, age, income, education of the respondent, and education of their mother will have a moderating effect on the value associated with an EFA. If supported, this research will help researchers and practitioners alike to better understand possible motivations for environmentally friendly behaviour, what defines the moral value of green, and what can be done to modulate the probability of a consumer choosing to perform an EFA (i.e purchasing a green product).

RESEARCH OBJECTIVE

The purpose of this research is to broaden the understanding of the evaluations of (and motivations behind) environmentally friendly acts (EFAs), their correlates, and the effect that performing an EFA has on future behaviour. This study will address several key questions pertaining to the evaluation of environmentally friendly behaviour, which may shed some light on the belief and motivational structures of environmentally friendly individuals relative to those who are not. From these evaluations, criterion for determining the 'value' of environmentally friendly actions will be established. It is hoped that through these evaluations, specific questions regarding the moderators and mediators of environmentally friendly behaviour will be answered. By doing so marketers will gain a new vantage point on why individuals engage in environmentally friendly behaviour, such as purchasing eco-friendly alternatives. This knowledge will allow them to better target ad campaigns, and design them in a manner most likely to affect buy-in. For researchers, this knowledge will expand the literature and open up new avenues of exploration into the motivations behind EFAs. This is important because while there is a global trend towards engaging in EFAs, resulting in increased purchases of environmentally friendly alternatives, the current framework of knowledge explaining why people engage in EFAs is only beginning to take shape.

RESEARCH QUESTIONS

Understanding the motivational underpinnings of EFAs is paramount to increasing the probability that people will engage in them. As such, the following questions were raised:

EFA related questions:

1. Is an individual observed performing EFAs evaluated more positively than an individual not observed performing EFAs?
2. Is the 'licensing value' of a given EFA is mediated by the monetary cost to the individual?
3. Do EFAs of different magnitudes have different 'licensing values'?
4. Is the 'licensing value' of an environmentally friendly act is mediated by its recency?
5. Are individuals who participate in EUAs evaluated less negatively if they also perform EFAs?

Conversely, the motivations underpinning ones decision to perform Environmentally Unfriendly Acts (EUAs) is also of great interest because of the possibility that performing EFAs is related to performing EUAs. As such, the following question was asked:

EUA related question:

6. Are individuals who participate in EUAs evaluated less negatively if they also perform EFAs, even if that act is unrelated?

Finally, the desire to understand the 'who' in addition to the 'why' of EFAs and EUAs led to the creation of the following demographic questions:

Demographic related questions:

7. Does having a particularly strong ecological worldview (according to the NEP scale) significantly impact the evaluation of EFAs
8. Does having a mother with a university degree (undergraduate or beyond) significantly impact the evaluation of EFAs?
9. Does gender of the child (respondent) significantly impact the evaluation of EFAs?
10. Does age of the respondent significantly impact the evaluation of EFAs?
11. Does income level of the respondent significantly impact the evaluation of EFAs?
12. Does the education of the respondent significantly impact the evaluation of EFAs?

LITERATURE REVIEW

Synthesis of literature

The following literature review draws from the major research areas displayed below. Understanding behaviour of any kind requires input from a wide breadth of disciplines, and controlling for a respondent's desire to appear socially desirable is of paramount importance.

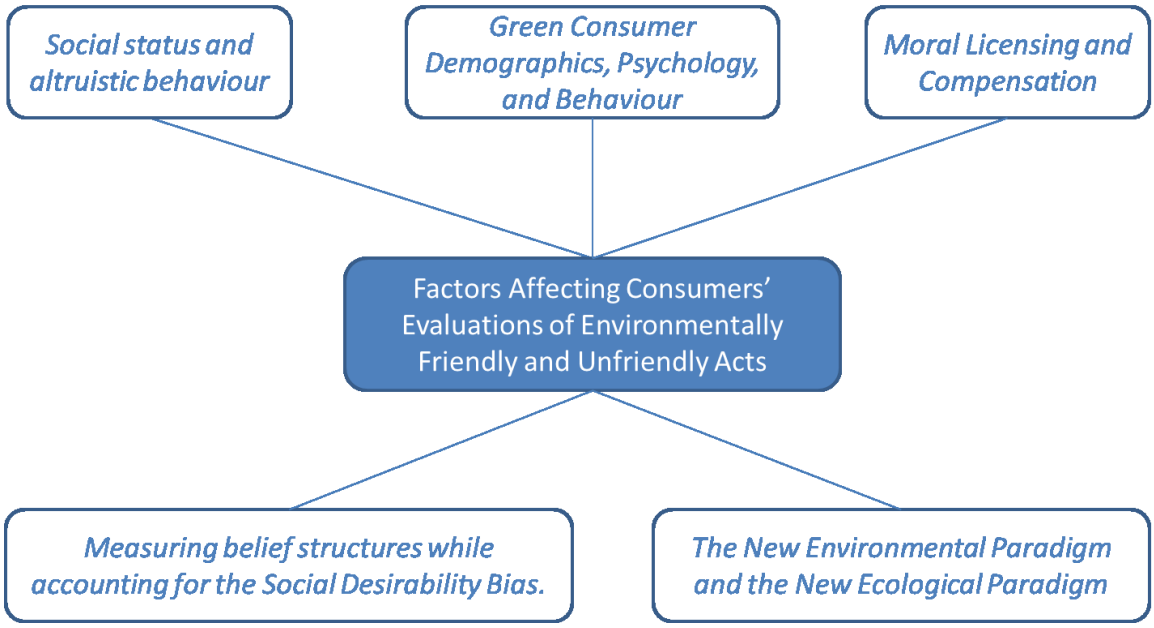


Figure 1: Literature Diagram

As climate change continues to impact the way everyday people go about their business, attempts to definitively identify what motivates environmentally friendly behaviours such as the purchase of green products have been unsuccessful. Social benefits related to being perceived as altruistic have been identified as a plausible motivator; however, demographics do not seem to provide any conclusive means for identifying a green consumer segment. Through the lens of moral licensing, a closer look into how altruistic

acts benefit the actor may provide the insight needed to understand the true motivations behind EFAs. Additionally, as people tend to respond to socially sensitive questions in a manner most likely to show them in a favorable light, it is important to account for the Social Desiability Bias when designing questionnaires. Finally, the motivation to perform EFAs may be mediated by a person's ecological worldview, and so the NEP scale will be applied to segment accordingly.

Social status and altruistic behaviour

Society as we know it is predicated on the notion that together we can achieve feats that we could not individually. Given that the necessity of collaboration must also be balanced with the innate desire to be happy, people strive to have the most personally fulfilling relationships possible. As such, they naturally seek to be held in high esteem by the peers and members of those social groups whose opinions they value. There are many ways to increase one's social status; however, one successful method common to most social groups is to act in a selfless or altruistic way - or at least to appear to do so (Griskevicius et al., 2010). Being perceived as the most altruistic member of a social group is positively correlated with group members showing a preference for interacting with that person (Hardy & Van Vugt, 2006). This is important because greater interaction, both in quantity and quality, can lead to a development or solidification of bonds with members of the group which can result in beneficial future outcomes. Furthermore, in terms of placing a social value on an altruistic act, not all acts are equal. As the cost, or degree of personal sacrifice, of the altruistic act increases so does the associated status reward (Hardy & Van Vugt, 2006). This supports the competitive altruism hypothesis, which states that people may behave altruistically because there are

specific social benefits only accessible to those of a certain reputation (Griskevicius, 2008; Hardy & Van Vugt, 2006). As with much else in our society, status breeds competition. As doing for others affords the doer special privileges, and acquiring special privileges is by definition something that is won over others, then perhaps the breadth of altruistic impact is a factor in how large a status reward is gained.

Green Consumer Demographics, Psychology, and Behaviour

In terms of altruistic pots of gold, one need not look very far to identify a potential treasure trove of altruistic opportunity. Doing good for the masses by being environmentally friendly is about as altruistically far-reaching as one can get, and so unsurprisingly (Abeliotis et al., 2010) found that green consumers identify climate change as the most important issue of our time. Additionally (and in line with the findings that people wish appear socially conscious), while many individuals claim to hold environmentally conscious attitudes, their actions do not always support their claims (Mainieri et al., 1997; Young et al., 2009). This was exemplified by a compelling contrast between two recent studies. A 1998 *Wall Street Journal* survey found that over 80% of Americans felt that environmental conscientiousness was more important than maintaining low prices (Bahn & Wright, 2001). Conversely, two other studies revealed that while a majority of consumers claim to have positive attitudes towards organic foods, actual purchase behaviours do not reflect these beliefs (Mainieri et al., 1997; Young et al., 2009). The dichotomy between self-reported environmental beliefs and associated action may be evidence that claiming to be an environmentally conscious consumer is now socially beneficial (Griskevicius, 2008). This newfound feeding ground for status-hungry individuals affords people an avenue to either legitimately perform altruistic acts

or simply express alignment with the cause in the hope of siphoning social status. Unsurprisingly, it appears that only a small (but growing) segment of those reporting concern for the environment act on those concerns by purchasing more environmentally friendly goods (Young et al., 2009). If many people are claiming to be environmentally friendly, but few actually are, identifying the few would serve to both set them apart by exposing the imposters and allow business to better meet their needs.

Extensive research has been undertaken in an effort to identify a relationship between environmentally friendly behaviour and demographic variables such as age, education, attitude, and income. If reliable relationships were to be found, companies and organizations could target their products and services more effectively and increase sales of environmentally friendly products while slowing environmental degradation. Unfortunately, the results have supported conflicting hypotheses and as such no consensus has been reached (Finisterra do Paço et al., 2009; Schlegelmilch et al., 1996). This lack of agreement has proved frustrating for the business and academic communities, as there is clearly an active and lucrative market evolving but its operational parameters remain undefined. Specifically, the effect of age on environmentally friendly attitudes and environmentally friendly purchase behaviour has been researched; however, results still support varying mutually exclusive hypotheses and consequently a predictive relationship remains elusive (Finisterra do Paço et al., 2009; Walton & Austin, 2011). Identifying that age range was a significant predictor of green behavior would allow for a far more targeted approach to advertising environmentally friendly products, services, or initiatives. More consistent results have been found for education and gender, with the majority of studies having found a positive

relationship between level of education and pro-environmental attitudes (Finisterra do Paço et al., 2009). Additionally, women buy more green products than men (Mainieri et al., 1997), and older females with higher education tended to be the greenest (Roberts, 1996). Finally, Straughan and Roberts (1999) state that as environmentally friendly purchases typically cost more than regular alternatives, a correlation between income and green purchase behaviour is likely. These findings indicate that there may in fact be slight leanings towards environmentally friendly behaviour along certain demographic divides. Even so, the strength, nature, and direction of these relationships have yet to be concretely defined and as a result the characteristics of the 'green consumer' are something still hotly debated in both academia and industry.

If demographics alone are insufficient to fully explain environmentally friendly behaviour, there may be a more complex system at work. Recent research has found strong correlations between personality variables and pro-environmental behaviour (Finisterra do Paço et al., 2009). Personality variables, unlike demographic variables, are more closely related to beliefs and decisions than categorization based on immutable or external variables. Not surprisingly, the more closely involved consumers are with the environment, and as such have more first-hand awareness of environmental issues, the more likely they are to buy green products (Becchetti & Rosati, 2007; Schultz & Oskamp, 1996), and pay more for them (Oliver, 2007). This finding fits with both common sense and current literature, as individual effort was found to be a strong moderator of the attitude-behavior relationship (Becchetti & Rosati, 2007; Schultz & Oskamp, 1996). This reinforces the concept that if an individual makes the conscious decision to expend their personal resources (time, energy, money) in a particular realm,

they will be pre-disposed to holding stronger and more positive attitudes towards the associated activities and / or social norms.

When one holds more positive attitudes about something it means that they are likelier to value the associated experience and outcome more; but what exactly does that mean? When used as a noun, value can be the regard with which something is held. When used as a verb, value can be estimate of monetary worth. It may be possible that the two are not mutually exclusive.

Moral Licensing and Moral Compensation

Recent research indicates that individuals engage in moral regulation when deciding whether to act in one's own best interest, or whether to make a more altruistic choice. Moral regulation is broken down into two distinct mechanisms: moral licensing and moral compensation (Zhong, liljenquist, & Cain, 2009). Moral licensing is the notion that future behavioural choices are a function of one's behavioural history, in that prior decisions influence which attributes are highlighted in subsequent decisions, how they are weighed, and which option is ultimately chosen (Zhong et al., 2009). Moral compensation refers to an act undertaken to 'right the moral scales'. Ramanathan and Williams (2007), as cited by Zhong et al. (2009), explain that "consumers attempted to 'launder' the negative emotions associated with over-indulgence by subsequently making more utilitarian (versus hedonic) consumption choices, thereby restoring a self-view of prudence and restraint". This righting of the scales is important in that it may represent a significant underpinning motivation in the decision to perform altruistic acts.

Consider the following example: An individual walks down the street and decides to give a dollar to a homeless person whom they are passing. Continuing on their way, a block later the individual passes a second homeless person. The impulse to give money to a second homeless person is stunted by the fact that they just made a charitable donation to a homeless person on the previous block. This example shows one direction in which moral licensing operates; however, Khan and Dhar (2006) demonstrated that moral licensing seems to work in the opposite direction as well where individuals will donate less money in the present if they have already committed to a future donation.

Furthermore, it appears that people can even use the *possibility* of making a future virtuous decision to justify a questionable decision in the present (Khan & Dhar, 2007). An example of this would be if an individual decides to not make a donation to an organization calling on the phone because they anticipate donating to another organization in the future. One would think that all of this internal bartering would affect the positive / negative balance of an individual's self-perception, however evidence suggests that self-esteem is unaffected when making indulgent decisions if a previous temptation went unfulfilled (Mukhopadhyay & Johar, 2009). This further demonstrates how individuals are able to shield themselves from the negative emotions sometimes associated with acting solely in one's own best interest. Surprisingly, this effect even extends beyond allowing for self-indulgences and into unethical territory. Mazar and Zhong (2010) demonstrate that engaging in EFAs, such as purchasing green products, leads to a decrease in altruistic behaviour while increasing rates of cheating and stealing. Thøgersen (2003) demonstrated that engaging in environmentally friendly behaviour in one area reduces the propensity of engaging in environmentally friendly behaviours in

other areas. If performing EFAs is currently being used as the most topical avenue to offset guilt selfish behaviour, is there a way to determine which individuals are most likely to take this path as opposed to another form of altruistic offset?

HYPOTHESES

The following hypotheses draw their foundation from the previous literature review, but are further supported by a subsequently focused set of sources.

H1: As people make evaluations of others in part based on their behaviours, an individual performing EFAs would be evaluated more positively than an individual not performing EFAs.

Concern for the environment has increased dramatically over the past several decades (Han, Hsu, & Sheu, 2010; Mainieri et al., 1997; Roberts, 1996). Given that "from a social identity perspective, when the salient basis for self-conception is a specific social identity, an individual's behaviour will become group-based and guided by the norms of that social category or group" (Fielding, Mcdonald, & Louis, 2008), it could be argued that a societal identity is forming around the concept of environmental consciousness. As such, engaging in EFAs is now perceived as positive by the general population (Han et al., 2010), as exemplified by practices such as recycling and the use of public transport (Halkier, 1999), and conversely, engaging in EUAs is now perceived as negative (Krause, 1993), as exemplified by fines for littering and other forms of pollution. Additional motivation to engage in a behaviour congruent with a current societal identity stems from the notion that a positive evaluation on one dimension will

positively influence how the individual is evaluated as a whole (Greguras, Robie, & Born, 2001). This position is supported by the finding that the observed instance of an EFA is indicative of engagement in environmentally friendly behaviour across multiple behavioural categories (Thøgersen, 2003).

H2a: Individuals who participate in EUAs are evaluated less negatively if they also perform EFAs.

H2b: Individuals who participate in EUAs are evaluated less negatively if they also perform EFAs, even if that act is unrelated.

Evidence abounds in society exemplifying the duality between good and evil. From the religious concept of doing penance to absolve one of sins to the penal system's code of serving jail time to pay for crimes committed, it has become engrained in every individual that doing good can offset doing bad. This system, however, appears to be temporally bi-directional. While one can atone for previous transgressions by performing subsequent good deeds, it would seem that one can also perform good deeds to offset future bad deeds. Monin and Miller (2001) showed that past virtuous behaviors licensed questionable actions, while Khan and Dhar (2006) found that when people had previously agreed to provide assistance to a foreign student in the future, they were less likely to donate money to charity in the present. Additionally, Zhong et al. (2009) state that "it is as if good acts earn points in a mental account that subsequent immoral acts can spend", even if the points were earned performing an act totally unrelated to immoral act in question. It is hypothesized that individuals who participate in EUAs are evaluated less negatively if they also perform EFAs, even if that act is unrelated.

<u>H3a:</u> The higher the monetary cost of the EFA in relation to the wealth of the individual, the higher licensing value of the EFA

<u>H3b:</u> EFAs of different magnitudes have different 'licensing values'.

Engaging in Environmentally Friendly Activities (EFAs) is perceived as positive by the general population (Han et al., 2010), and can earn the engager a pro-social reputation (Semmann, Krambeck, & Milinski, 2005) which is positively correlated with preferential selection for social interaction (Hardy & Van Vugt, 2006). These findings are in line with the predictions of Costly Signaling Theory, which states that people engaging in seemingly altruistic behaviours are more attractive to others than those who only act in their own best interest (Price, 2003) as well as with the Competitive Altruism hypothesis mentioned above. Additionally, (Hardy & Van Vugt, 2006) demonstrated that personal status can be increased by engaging in self-sacrificing behaviours which benefit the group, such as paying a premium for green products. Furthermore, (Griskevicius, 2008) found that appearing to be more environmentally friendly can translate into being viewed as more trustworthy, and more desirable as a friend, ally, and / or leader. These findings hinge on two empirically demonstrated premises: that the amount of effort an individual is prepared to exert to perform EFA's is seen as positively related to their attitudes towards environmental issues (Schultz & Oskamp, 1996), and that external parties viewing an individual performing an EFA may assume this action is indicative of overarching attitudes and behavioural / personality characteristics (Greguras et al., 2001). That said, how is a 'value' assigned to the act of charity by an observer – in essence, what mediates moral licensing? Consider this: if Bill Gates, and a single mother of three working two full-time jobs, were to simultaneously give $20 to a homeless person, would

they be evaluated the same or would they be evaluated as a function of their ability to donate? Hardy & Van Vugt (2006) found that as the cost of performing a seemingly altruistic act increases, so does the associated social benefit. Lastly, Costly Signaling Theory would indicate that the more individually costly the signal, the better it acts as an indication of true intent and motivation (Bliege Bird, Smith, & Bird, 2001). Given this, it is hypothesized that that the 'licensing value' of a given EFA is mediated by the cost to the individual, and that not all pro-social acts are weighed equally (buying a Toyota Prius vs. a Hummer and buying organic vs. regular lettuce). For the purposes of this investigation we will operationally define 'cost' as the relative affect that that the act has on an individual's overall income.

H4: The 'licensing value' of an environmentally friendly act decreases over time.

As previously mentioned, there is a positive value associated with performing an environmentally friendly act (Han et al., 2010). This value can be used as a form of intangible moral currency (Zhong et al., 2009), and this currency can be exchanged to decrease the guilt associated with performing a morally questionable act (Khan & Dhar, 2007) and can also act as a signaling tool to appear less morally reprehensible (Griskevicius et al., 2007). This system, however, may not act in a completely linear fashion. Consider the following: making a ten dollar donation on January 1st may buffer an individual from guilt about turning down another request for a donation on January 2nd, but may not carry the same value if asked to donate two years later. Given that the value of all currency fluctuates over time, it is predicted that this currency is no different; the value of a particular action may lessen steadily over time, and will disappear if 'spent' (using one altruistic act to justify not performing another).

H5a: Having a particularly strong ecological worldview (according to the NEP scale) will significantly impact the positive evaluation of EFAs.

H5b: Having a mother with a university degree (undergraduate or beyond) will significantly impact the evaluation of EFAs.

H5c: The gender of the child (respondent) will significantly impact the evaluation of EFAs, in that women will be more likely to condone moral licensing.

H5d: The age of the respondent will significantly impact the evaluation of EFAs, in that middle-aged individuals will be more likely to condone moral licensing.

H5e: The income level of the respondent will significantly impact the evaluation of EFAs, in that wealthier individuals will be more likely to condone moral licensing.

H5f: The education level of the respondent will significantly impact the evaluation of EFAs, in that more educated individuals will be more likely to condone moral licensing.

Significant relationships between the NEP scale and various types of behavioural intentions, as well as both self-reported and observed behaviours have been found by numerous studies (Dunlap, Van Liere, Mertig, & Jones, 2000). Given that evaluations of others are related to one's internal standpoint it is predicted that a subject's ranking on the NEP scale will mediate their evaluation of environmental moral licensing such that an individual with a strong ecological worldview will be more likely to condone it (H5a)

The majority of studies have found a positive relationship between level of education and pro-environmental attitudes (Finisterra do Paço et al., 2009), which is then also correlated to willingness to spend more on green products (Oliver, 2007). Moreover, women buy more green products than men (Mainieri et al., 1997), and older females with higher education tended to be the greenest (Mainieri et al., 1997). Furthermore, as

environmentally friendly products can sometimes be more expensive than their counterparts, Laroche, Bergeron, and Barbaro-Forleo (2001) found that women who are married with at least one child are more willing to pay a premium for environmentally friendly products. If more educated, affluent women tend to hold positive environmental attitudes and are the most inclined to purchase green products even if there is an associated increase in costs, then it is hypothesized that individuals from homes where the mother has completed university studies (undergraduate or beyond) are more likely to condone the use of environmental moral licensing than those who did not (H5b). Additionally, as a mother's influence is not the same across gender, resulting in different socialization outcomes (Witt, 1997), it is proposed that the respondent's gender will have a significant effect on their evaluation of EFAs (H5c). As certain studies have shown that age may be a factor in environmentally friendly purchase behaviour (Laroche et al., 2001; Mainieri et al., 1997) as well an influencing factor in the likelihood that a respondent's mother is university educated, age is predicted to have a moderating effect on the evaluation of EFAs (H5d). As environmentally-friendliness has been associated with increased costs, income level is predicted to be positively correlated with evaluation of EFA's (H5e). Finally, given that educated women are shown to be the 'greenest', it is predicted that being educated will be positively associated with condoning the use of environmental moral licensing (H5f).

STUDY DESIGN

The New Environmental Paradigm and the New Ecological Paradigm

Of all scales employed to measure environmental concern, The New Environmental Paradigm (NEP) Scale, developed in 1978, was the most used prior to the year 2000; it appears in hundreds of studies across dozens of nations. (Dunlap & Van Liere, 2008). A major revision to the original scale was published in 2000, which extended the scale from twelve to fifteen items, and addressed weaknesses present in the original framework. The revised scale is called the New Ecological Paradigm (NEP) Scale, and has been cited over 700 times as of August 2010; where the New Environmental Paradigm scale had been cited over 1000 times since 1978 (Dunlap & Van Liere, 2008). The revised 15-point NEP scale is used to measure the degree to which an individual holds an ecological worldview, and numerous studies have found significant relationships between this measure and various types of behavioural intentions as well as both self-reported and observed behaviours (Dunlap et al., 2000). If holding an ecological worldview, or reporting concern for the environment and the current state of human-earth interaction, can be linked to behavioural outcomes then it stands to reason that this effect would be present in the evaluation of EFAs.

"The revised NEP scale is predicated on three underlying concepts; "(1) Nature is a limited resource upon which humans rely; (2) Nature is balanced, highly inter-dependent and complex, and therefore susceptible to human interference; and (3) Materialism and lack of contact with nature have led our society to devalue nature" (Dunlap et al., 2000).

The revised NEP has been used in many recent studies to explore the psychological barriers to, or correlates of, environmentally friendly behavior (Byrka, Hartig, & Kaiser, 2010; Stern, 2011; Swami, Chamorro-Premuzic, Snelgar, & Furnham, 2011; Walton & Austin, 2011). The use in relation to environmental attitudes and high incidence of citation make this scale a good fit for attempting to identify correlates of EFAs. The scale has been shown to have a high degree of internal consistency (Dunlap & Van Liere, 2008), making it a reliable measure of environmental attitudes. Conversely, the predictive power of the scale has been questioned as it has yielded mixed results for both behavioural intentions and actions (Cordano, Welcomer, & Scherer, 2003). This will not pose a problem for the current study as outcomes are not evaluated, simply the evaluation of behaviours. It does however lend further evidence to the notion that individuals reporting attitudes towards socially sensitive topics such as the environment are not necessarily acting as they claim they are. Be that as it may, as awareness and genuine concern of environmental degradation continues to rise, holding a strong ecological worldview may become a powerful motivator of environmentally friendly behaviour. While this may also become a significant factor in the increasing demand for environmentally friendly products and services, measuring an individual's true feelings on such a socially-charged topic is often tricky.

Measuring belief structures while accounting for the Social Desirability Bias.

Research dating back to the 1930's (Nederhof, 1985) demonstrates that when individuals are asked to provide an opinion or evaluation, the response can sometimes be skewed by the desire not to appear socially unfavorable; this is referred to as the Social Desirability Bias (SDB) (de Jong, Pieters, & Fox, 2010). When researching topics for

which the perception that specific responses may result in loss or gain of social status exists, attempting to control for SDB is essential to maintaining validity (Nederhof, 1985). Several methods have been developed to reduce the effect of SDB, such as coupling anonymity with self-administered questionnaires which drastically reduces the observer-bias aspect of SDB, as well as burying sensitive questions in amongst socially neutral questions (Nederhof, 1985). Scales have also been developed to categorize respondents according to their propensity to be affected by the SDB, allowing researchers to control for these individuals during analysis. Perhaps the most commonly used scale, cited over 1600 times as of August 2011, is the Marlowe-Crowne Social Desirability Scale (MCSDS) which consists of 33 items (Crowne & Marlowe, 1960). While categorizing individuals by this propensity might be useful, differences in what individual respondents consider to be socially desirable could potentially confound the results. Furthermore, Paulhus & John (1998) claim that SDB is best analyzed when split into two separate motivational constructs: moralistic and egoistic. They found that some participants will be more likely to express SDBs for situations related to communion (love, connection, etc) whereas others will express SDBs for situations related to agency (power, status, etc). To determine the degree to which individuals either inflate or deflate self-report responses to the Big-Five question, the authors used the Self-Criterion Residual scale. This scale compares the scores reported by an individual with peer evaluations of the individual on the same questions. By cancelling out the overlapping variance between the self and peer reports, the residual represents the self-report deviation – otherwise referred to as the self-favoring bias.

Measuring belief structures is difficult, and so in light of all previous research into controlling for SDB it will be wise to take steps to control for it in the current study. With effective controls in place the true motivations behind EFAs and EUAs may be further revealed, affording researchers and marketers a clearer idea of what drives environmentally friendly behavior.

Survey Design

In designing a survey that seeks to extract honest responses regarding viewpoints on socially-sensitive issues, the need to control for the SDB was paramount. Instead of utilizing a direct method of questioning whereby individuals would have been asked to indicate their standpoint on environmental statements (e.g.: "Do you feel that people who perform EFAs are better than those who do not?"), an indirect questioning method was employed to reduce the effect of SDB (Fisher, 1993). Indirect questioning has been used in a variety of ways, such as of asking respondents to evaluate what others think of sensitive issues (Jo, 2000; Lusk & Norwood, 2009). It has been shown that people's predictions of what others think are made in an egocentric manner: one that is consistent with their own opinions (Van Boven, Loewenstein, & Dunning, 2005). Finally, as the questionnaire was administered via the Internet and is anonymous, there was a reduced likelihood that people would select responses likely to make them look better; otherwise known as the observer effect.

Data collection involved creating scenarios wherein a prize must be awarded for environmental friendliness and social responsibility to one of two fictional individuals, or to both. It was decided that providing an "award no one" option would not be prudent as

the objective of the study was to determine if people felt that a difference existed between the actions of the two individuals or if they were equal. The awarding of the prizes acts as a proxy for the social, normative, and societal beliefs of the respondent and is intended to indicate the value of a given environmentally friendly act to the respondent. This should also reduce the likelihood that the SDB would significantly affect responses. In each scenario, the actions of two individuals were described and the respondents were instructed to evaluate and award the action based on the information provided. For example: "Individual 'K' drives a hybrid car to work and back every day (total = 105km). Individual 'L' drives a regular car to work and back every day (total = 105km)". Each scenario was tailored to address a specific hypothesis. Additionally, each hypothesis was tested twice by two separate questions, one of which was reverse-coded to minimize response bias. Table two provides an example of these questions.

Scenario 2)
A prize **MUST** be awarded for environmental friendliness and social responsibility to at least one individual below.

Individual 'C' decides to ride a bicycle to work and back every day for one month (total = 250km).
Individual 'D' drives to work and back every day for one month (total = 250km).

H1	STRONGLY AGREE	MILDLY AGREE	ARE UNSURE	MILDLY DISAGREE	STRONGLY DISAGREE
1. Both individuals equally deserve to be awarded the prize.	1	2	3	4	5
1. Individual C should be awarded the prize.	1	2	3	4	5
1. Individual D should be awarded the prize.	1	2	3	4	5

Scenario 12)
A prize **MUST** be awarded for environmental friendliness and social responsibility to at least one individual below.
Individual 'U' does not recycle for the month of May.
Individual 'V' recycles every day for the month of May.

H1	STRONGLY AGREE	MILDLY AGREE	ARE UNSURE	MILDLY DISAGREE	STRONGLY DISAGREE
1. Both individuals equally deserve to be awarded the prize.	1	2	3	4	5
1. Individual U should be awarded the prize.	1	2	3	4	5
1. Individual V should be awarded the prize.	1	2	3	4	5

Figure 2: Example Question. Full randomized questionnaire in Appendix 2

To establish reliability, i.e. determining whether subjects agreed with the choice of individual to which they awarded a prize, a five-point Likert scale measuring agreement was added after each scenario. Demographic information such as gender, age range, income range, own education, and mother's education was collected.

An online survey panel was employed for data collection as it represented the most effective way to get a panel sample of Canadians. The panel, run by SurveyLion, provided a total sample of 350 participants from across the country. The survey design interface allowed the creator to set exclusion criteria, enabling researchers to stratify their samples as needed. For this survey, an equal number of males and females were sampled. Additionally, a consent form was presented at the beginning of the

questionnaire informing participants of their rights and providing them the option to quit if they did not agree with the terms of participation.

Participants and Data Collection

A pretest with a sample of 14 undergraduate and graduate students from the John Molson School of Business was utilized to determine the validity and reliability of the questions. A second pretest similar to the first with a sample of 17 was conducted to refine some questions and increase reliability. A 'soft run' with a sample of 50 was conducted using participants from the main sample of 350 as a final measure of reliability. The primary method of data collection was an online survey via SurveyLion.com with an estimated sample of 350 (including the 50 from the 'soft run' as nothing was changed).

Data Analysis Methods Employed

Once collected, several steps had to be taken before analyzing the data pertaining to the hypotheses. A frequency distribution, as well as a chi-squared goodness of fit employing Spearman's rho was employed to determine whether the majority of individuals agreed with their choices throughout the survey (Table 2). The purpose of this was to ensure that the responses could be interpreted as representing the true sentiment of the respondent and not as a "best of the worst" selection. As each hypothesis was tested via two separate scenario questions, a within-subject correlation was run between the responses to the two questions in each of the seven pairs. Before this could be accomplished the responses to the second question in each pair needed to be

reversed (i.e 1 = 2, or 2 = 1), as they were specifically designed to be the inverse selection of each other to prevent the entire questionnaire from having the same expected response. If the two versions of the hypotheses were significantly correlated (after inversing the reverse-coded version), their scores were added together and a mean response was used to simplify further analysis. A second frequency distribution was then utilized to show the new combined answer distribution across response categories in the each of the seven EFA questions.

To make use of the NEP scale as a potentially significant moderator of environmentally friendly behavior, it first needed to be reduced down to its underlying factors in the same way as originally done by its creators. As such, tests for the estimation of pairwise correlation coefficients and normality were run as well as a Principal Component Analysis (PCA) and a Principal Axis Factoring method of Factor Analysis after reverse coding the negatively worded questions. Two separate rotations, orthogonal and oblique, were employed to explore the possibility of correlations between the significant factors. If correlations between factors were to be found, then the interpretation of the results would have been more complex. It was determined that the PCA with orthogonal rotation was the most pertinent and interpretable.

A series of multinomial logistic regressions were run to identify significant relationships between which individual was awarded the prize in each hypothesis scenario and the NEP factors (H5a), mother's education level (H5b), gender (H5c), age range (H5d), income range (H5e), and own education level (5f). The multinomial logistic regression method was selected because it has the capacity to analyze the relationships between multiple variables, but unlike the binomial logistic regression it accepts variables

with more than two outcome states (i.e choose A,B,C, etc.). Furthermore it allows researchers to identify significant relationship and interactions between different variables (i.e selection of individual to award and mother's education) and also between different levels within each variable when there are more than two outcome states (i.e choice of individual to award and income level).

RESULTS

Descriptive Statistics

Gender

Response	Chart	Percentage	Count
Male		50%	175
Female		50%	175

Age Range

Response	Chart	Percentage	Count
18-24		5%	18
25-34		18%	63
35-44		18%	63
45-54		20%	69
55-64		27%	96
65 or Above		12%	41

Income Range

Response	Chart	Percentage	Count
$0 - $25,000		23%	79
$25,001 - $50,000		31%	107
$50,001 - $75,000		22%	77
$75,001 - $100,000		15%	54
$100,001 - $150,000		7%	23
$150,000 +		3%	10

Own Education

Response	Chart	Percentage	Count
High School or Equivalent		32%	113
College		38%	131
Undergraduate		15%	51
Graduate		16%	55

Mothers Education

Response	Chart	Percentage	Count
Yes		21%	75
No		79%	275

All counts sum to 350

Table 1

As viewed in the table above, the sample encompassed respondents with a range of descriptive statistics. The sample was equally distributed between males and females. The age range was fairly equally balanced, with a slight preference towards the 55-64 age bracket. Respondents represented all ranges of income although the bulk of respondents make under $75,000. Most of the respondents have a college or higher education although the majority responded that their mother's did not have an undergraduate education or higher.

Sample Response Frequencies

Before analyzing to whom subjects awarded the prize for environmental friendliness and social responsibility, or whether any other variables mediated or moderated that choice, it needed to be determined that subjects who awarded the prize felt comfortable with their choice. A minimum overall agreement rate of 75% for any question was chosen as the cutoff for what could demonstrate validity in terms of a sufficient percentage of subjects agreeing with their choices. The frequency distribution for the subject's agreement with their choice indicated an average agreement of 88.2% with their chosen responses to the EFA award questions. The results are summarized below.

SUMMARY OF HYPOTHESIS CHOICE

Hypothesis		Result		
1	bike vs. drive to work	92.00%		
1-r	recycle vs. not recycle	94.86%		
2a	hybrid vs. regular car	88.29%		
2a-r	air conditioner vs. air conditioner + EFA	85.43%		
2b	SUV vs. SUV + organic	79.43%		
2b-r	Flight vs. Flight + EFA	84.57%		
3a1	EFA = 30% income vs. EFA = 3% income	90.29%		
3a1-r	EFA = 28% income vs. EFA = 2% income	90.57%	mean =	88.20%
3a2	EFA = 39.99% income vs. EFA = 40% income	92.57%		
3a2-r	EFA = 30% income vs. EFA = 30.01% income	94.00%		
3b	hybrid vs. organic lettuce	88.29%		
3b-r	insulates one window vs. 'greens' house	91.71%		
4	EFA purchase last week vs. one two years ago	82.29%		
4-r	EFA donation last week vs. one two years ago	80.57%		

Sum of percentages from "Strongly Agree" and "Agree"

Table 2

Once agreement was confirmed for all questions via descriptive statistics, a chi squared was run to further ensure significance. The results of the chi squared indicated that in all 14 scenarios the agreement with award recipient was significant at $p < .000$, df(4). Subsequently, correlations were run between the two scenarios addressing each

hypothesis in the hopes of reducing the total number of variables from fourteen to seven. All non-parametric correlations were shown to be significant at either the $p < .01$ or .05 levels (1-tailed), confirming that combining the responses was statistically permissible. Results are summarized in Appendix 1 where the relevant significant correlations are highlighted.

Factor analysis

Using the combined responses a Factor Analysis (FA) with default settings for principle axis extraction, orthogonal rotation, and Kaiser normalization was conducted in SPSS on the 15-question NEP scale. The primary goal of the FA in this research was to determine if the same groupings found in the paper describing the original NEP scale existed in the current dataset. The FA reduced the 15 NEP factors down to three significant factors, explaining a total of 42.1% of the variance (Table 3). Appendix 3 contains the SPSS output related to the FA, including eigenvalues, scree plot, total variance explained by each factor, and communality. The three rotated factors loaded significantly (>.4) on specific NEP questions, and after consideration were named as follows:

SUMMARY AND BREAKDOWN OF NEP FACTOR REDUCTION		
Reduced Factors	**Significant NEP factors**	**Loadings**
Factor 1: **Eco-Pessimism** (Apocalypse: 26.865%)	1. We are approaching the limit of the number of people the Earth can support.	.405
	3. When human interfere with nature it often produces disastrous consequences.	.602
	5. Humans are severely abusing the environment	.707
	7. Plants and animals have as much right as humans to exist.	.698
	9. Despite our special abilities humans are still subject to the laws of nature.	.478
	13. The balance of natures is very delicate and easily upset.	.525
	15. If things continue on their present course, we will soon experience a major ecological catastrophe.	.640
Factor 2: **Eco-Optimism** (Status-Quo: 10.291%)	2. Humans have the right to modify the natural environment to suit their needs.	.551
	4. Human ingenuity will insure that we do NOT make the earth unlivable.	.519
	6. The earth has plenty of natural resources if we just learn how to develop them.	.452
	8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	.644
	10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.	.544
	12. Humans were meant to rule over the rest of nature.	.543
	14. Humans will eventually learn enough about how nature works to be able to control it.	.638
Factor 3: **Eco-Realism** (Natural Limits: 4.945%)	1. We are approaching the limit of the number of people the Earth can support.	.510
	6. The earth has plenty of natural resources if we just learn how to develop them.	-.432
	11. The earth is like a spaceship with very limited room and resources.	.665

Table 3

The finding that there are three distinct factors, or categories, that can determine one's ecological worldview demonstrates that there may be a more dynamic moral tug-of-war at play than previously described by the original study. Eco-Pessimism (Factor 1)

loads on many factors related to the notion that humans are not mightier than nature and that our free-for-all use of natural resources will come back to harm us. Eco-Optimism (Factor 2) loads heavily on factors related to the notion that humans are meant to mold their environment to suit their needs and that our evolving knowledge of science will be sufficient to evade any major environmental catastrophes. Finally, Eco-Realism (Factor 3) loads on several factors representing a balanced viewpoint regarding the potential for humans to rise above challenges, such as those posed by limited resources and a population explosion, but also the possible repercussions if effective solutions are not found.

Hypotheses outcomes

After completing the FA it was possible to analyze the results of the individual hypotheses. The hypothesis-related results are described below, and are summarized in Table 4. A response rate of 75% was selected to indicate support for a given hypothesis.

ANALYSIS OF INDIVIDUAL HYPOTHESIS COMBINATION AFTER

	Hypothesis and brief description	Both individuals	Individual 1	Individual 2
1	Perform EFA = evaluated better	8.29%	87.71%	4.00%
2a	EUA + EFA > EUA alone	12.57%	84.43%	3.00%
2b	EFA need not be related to EUA	13.43%	82.71%	3.86%
3a1	EFA $ relative to income impacts licensing value	55.57%	41.14%	3.29%
3a2	Objective EFA $ impacts licensing value	79.14%	5.00%	15.86%
3b	Not all EFAs are equal	39.29%	54.86%	5.86%
4	Recency affects EFA licensing value	77.14%	8.71%	14.14%

Results after combining hypotheses
All rows sum to 100%

Table 4

H1: As people make evaluations of others based on observed behaviours, an individual observed performing EFAs would be evaluated more positively than individuals not observed performing EFAs. A frequency analysis demonstrated that

H1 was supported with a response rate of 87.7%. Mother's Education was significant at p <.000 for "Both Individuals" and "Individual 1", as was the Intercept.

H2a: Individuals who participate in EUAs are evaluated less negatively if they also perform EFAs (H2a). A frequency analysis demonstrated that H2a was supported with a response rate of 84.4%. Gender was significant at $p < .036$ and Eco-Optimism was significant at $p < .005$ for "Both Individuals", and Eco-Optimism was significant at $p < .001$ for "Individual 1". Additionally, the intercept was significant for "Both Individuals" at $p < .008$ and at $p < .002$ for "Individual 1".

H2b: Individuals who participate in EUAs are evaluated less negatively if they also perform EFAs, even if that act is unrelated. A frequency analysis demonstrated that H2b was supported with a response rate of 82.7%. Eco-realism was significant at $p < .009$ for "Both Individuals" and at $p < .01$ for "Individual 1", and age range was significant at $p < .016$ for "Both Individuals" and at $p < .006$ for "Individual 1".

H3a1: The 'licensing value' of a given EFA is mediated by the monetary cost to the individual, where cost is operationalized as a difference is relative financial impact on the individual. A frequency analysis indicated that H3a1 was not supported with a response rate of 41.1%. The Intercept was significant at $p < .033$ for "Both Individuals" and at $p < .032$ for "Individual 1".

H3a2: The higher the monetary cost of the EFA in relation to the wealth of the individual, the higher licensing value of the EFA.. A frequency analysis demonstrated that H3a2 was supported with a 79.1% response rate and was found to have no significant dependent variables.

H3b: EFAs of different magnitudes have different 'licensing values'. A frequency analysis indicated that H3b was not supported with a response rate of 54.8%. Eco-Optimism was significant at $p < .011$ and Eco-Pessimism was significant at $p < .023$ for "Both Individuals". Furthermore, Eco-Optimism was significant at $p < .048$ and the Intercept was significant at $p < .048$ for "Individual 1".

H4: The 'licensing value' of an environmentally friendly decreases over time. A frequency analysis indicated that H4 was not supported with a response rate of 8.7% and was found to have no significant dependent variables.

The results for the following hypotheses are summarized in Table 5 and described below along with the logic model for the analyses.

H5a: Having a particularly strong ecological worldview (according to the NEP scale) will significantly impact the positive evaluation of EFAs.

H5b: Having a mother with a university degree (undergraduate or beyond) will significantly impact the evaluation of EFAs.

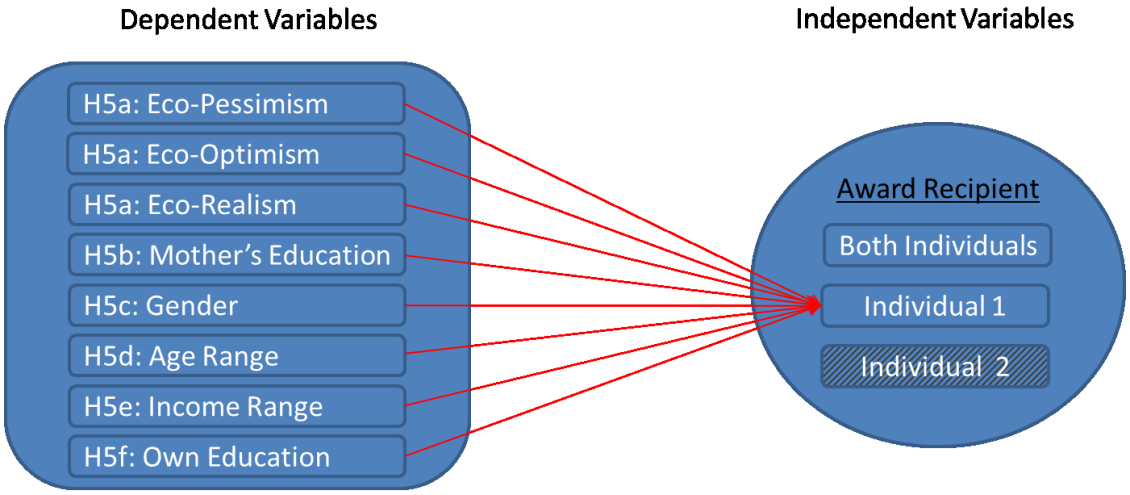
H5c: The gender of the child (respondent) will significantly impact the evaluation of EFAs, in that women will be more likely to condone moral licensing.

H5d: The age of the respondent will significantly impact the evaluation of EFAs, in that middle-aged individuals will be more likely to condone moral licensing.

H5e: The income level of the respondent will significantly impact the evaluation of EFAs, in that wealthier individuals will be more likely to condone moral licensing.

H5f: The education level of the respondent will significantly impact the evaluation of EFAs, in that more educated individuals will be more likely to condone moral licensing.

Logic Model:



N.B: This model applies to all hypotheses except H3a2, for which the expected outcome was "Both Individuals"

Figure 2: Logic Model

SUMMARY OF RESULTS FROM MULTINOMIAL LOGISTIC REGRESSION

	H1	H2a	H2b	H3a1	H3a2	H3b	H4
Intercept	.000	.008	.762	.033	.903	.078	.652
	.000	.002	.270	.032	.670	.048	.488
H5a: Eco-Pessimism	.845	.760	.309	.518	.465	.023	.692
	.497	.965	.228	.688	.233	.212	.055
H5a: Eco-Optimism	.885	.005	.122	.182	.444	.011	.498
	.448	.001	.091	.325	.782	.009	.231
H5a: Eco-Realism	.813	.683	.009	.582	.311	.078	.205
	.714	.444	.009	.226	.770	.422	.806
H5b: Mother's Education	.000	.174	.873	.405	.821	.312	.100
	.000	.149	.806	.609	.566	.606	.401
H5c: Gender	.376	.036	.460	.630	.072	.534	.801
	.383	.081	.262	.482	.860	.190	.922
H5d: Age range	.630	.302	.016	.379	.181	.076	.007
	.269	.213	.006	.637	.778	.056	.537
H5e: Income range	.249	.567	.207	.636	.181	.276	.978
	.588	.574	.262	.612	.779	.246	.583
H5f: Own Education	.328	.412	.835	.213	.672	.166	.642
	.204	.241	.428	.103	.380	.359	.636

Award:	Both Individuals	Individual 1
Result:	Significant	Insignificant

Table 5

DISCUSSION

The purpose of this study was to offer insight into the motivations behind EFAs: to understand what is gained from performing EFAs, and how it is leveraged. In an attempt to avoid social desirability biases associated with self-report measures, a questionnaire was employed requesting that the respondent review specific scenario questions and for each award a prize for environmental friendliness and social responsibility. To ensure that the respondents were comfortable with their choice, a 5-point Likert scale measuring response satisfaction was added after each question. The results from the satisfaction scales indicated that most individuals were happy with their choices. These findings allowed us to proceed under the assumption that the choices are reflective of the respondent's point of view, and not a "best of the worst" selection. The significant correlations between each of the two scenarios designed to measure each hypothesis demonstrates that both questions in each pair were answered in the same fashion and could therefore be combined to half number of variables requiring analysis.

The factor analysis of the 15-point NEP scale revealed the presence of three significant factors named Eco-Pessimism, Eco-Optimism, and Eco-Realism. The original study from which the scale was taken reported that their scale reduced to one factor, but a closer look at their statistics indicated that they in fact had a four-factor model. The eigenvalues for the four factors found were 4.7, 1.5, 1.2, and 1.1 respectively. The findings were mostly consistent with the original NEP results: The first reduced factor shared four of six original factors with an eigenvalue of 2.18 after rotation, the second shared the same with an eigenvalue of 2.357, and the third shared both of the factors

found in the original study with an eigenvalue of 1.143. A fourth factor was not found in this study. Given the nature of this study and the three award choices, having three factors for classifying environmental attitudes proved useful in differentiating respondents.

THEORETICAL AND PRACTICAL APPLICATIONS

H1 and H5b:

Support for H1 suggests that individuals who perform an EFA are evaluated more positively than those who do not. This finding fits with current literature demonstrating that appearing to be socially conscious is socially beneficial (Griskevicius, 2008). The practical value in this finding lies in its leveragability. While individuals may be able to leverage the socially beneficial nature of EFAs, marketers can capitalize by making the leveraging process easier. Companies with an environmentally friendly product or service wishing to increase sales and exposure could provide incentives for clients to either refer friends or bring them directly to the store, thereby providing a public milieu for the EFA to occur. They could also engage social media to further both their reach and the reach of their client's EFAs. This would allow for both brand exposure across social networks while giving the individual the ability to showcase their EFA across a far wider swath of potential viewers.

While performing EFAs is positively evaluated, being of an educated mother does not seem to impact that evaluation as predicted and as previously described in the literature review (Mainieri et al., 1997). As will be further discussed in the limitations, selecting "Both Individuals" suggests that both Individuals 1 and 2 are equally praiseworthy or they are equally not praiseworthy. Conversely, selecting "Individual 1" indicates a clear distinction from "Individual 2". Therefore, the finding that a lack of education on the part of the mother significantly affects the decision to award the prize to both "Both Individuals" and "Individual 1" is difficult to interpret. The most logical

explanation is not including sufficient numbers of respondents when running the survey. Most individuals reported not having a mother with university education (78.6%), and upon further review it appears that the questions asked to test this hypothesis might not have been innocuous enough as to avoid the social desirability bias. As such, respondents may have felt that awarding the prize to "Individual 2" would have been socially inappropriate. This would lead to most individuals splitting between "Both Individuals" and "Individual 1". Given that roughly 80% of respondents did not have a mother with university education, it is not surprising that this would show up as statistically significant.

H2a, H5a, and H5c. H2b, H5a, and H5d:

Support for H2a and H2b suggests that individuals who participate in EUAs are evaluated less negatively if they also perform EFAs (H2a), and that the acts need not be related (H2b). This finding reveals that Western society's belief in offsetting bad acts with good ones extends to the environment, and that there need be no relationship between the EUA and EFA. This finding is of particular interest as it could form the basis of virtually any advertising / marketing tactics related to environmentally friendly products, services, or initiatives. It is possible that a company could use the previous, current, or future transgressions of consumers as a leverage-point for increased sales of environmentally friendly products or services. For example, grocery stores have begun to offer client cards that offer preferred discounts but that track purchases. If this purchase information could be compared with the footprint of each product, the customer could be made aware of their grocery bill's environmental footprint and offered product substitutes to lower it. Additional information such as distance driven per week, make of car, or

even a full website-based carbon footprint calculation could be included in the calculation to offer a more representative offset target. The purchase data gathered could then be analyzed to determine the preference for particular substitutes or the effectiveness of certain offerings, which could also be contrasted against known demographic data for a given client. Countless such examples exist in the market today, such as the opportunity to pay X$ when buying a plane ticket to offset your portion of the flight's carbon footprint. The fact that the EFA need not be related to the EUA demonstrates a lack of understanding on the part of the average Canadian regarding the interconnected nature of EUAs and EFAs in terms of what actually counterbalances what. This lack of understanding may result in misaligned offsetting behaviour that, while not a bad thing in and of itself, may not have the intended effects.

The finding that for H2a being an eco-optimist played a significant role in whether the individual chose either "Both Individuals" or "Individual 1" when they were evaluating whether EUAs can be offset by EFAs is interesting (H5a). Being an eco-optimist suggests that the respondent believes that the human race will overcome global warming or that it is not truly a dire issue. If an eco-optimist awarded the prize to "Individual 1" - the individual performing the EFA as well as the EUA - it may be interpreted that the respondent believes that performing EFAs actually does offset EUAs and that by being more eco-friendly we can avoid devastating global effects. In the case of "Both Individuals" being awarded the prize, the eco-optimist categorization could be interpreted as the respondent indicating that because the issue of global warming is somewhat of a non-issue for them they don't consider the awarding of a prize for environmental friendliness to be worthwhile. As such, and in lieu of an 'award nobody'

option, they may have chosen to award "Both Individuals". Interestingly, gender (H5c) was a significant factor for individuals awarding "Both Individuals" for H2a. The negative beta (-2.352) indicates that males were more likely to select "Both Individuals" versus females. However, one must not draw too much significance from this, as it would be assumed that this finding would result in females being significantly more likely to give an award to "Individual 1" which they were not. This may be explained by the difference in response proportion between "Both Individuals" (12.57%) and "Individual 1" (84.43%). Given the large difference, a significant finding on a 2-level factor like gender in the smaller group will not necessarily result in the inverse relationship in the larger group.

The finding that eco-realism (H5a) was significant for "Both Individuals" and "Individual 1" for H2b may demonstrate that people are unaware of the impact that EFAs have in relation to UFAs (i.e an EUA that releases carbon into the atmosphere (driving a car) can be offset by and EFA that reduces pesticide use (buying organic vegetables)). As eco-realism is characterized by an understanding that the earth has finite resources and that we must use them wisely if we are to survive and prosper, there may simply be a lack of knowledge regarding the nature of these offsets. This can be explained by the recency with which environmental issues have come to the forefront of mass media, but does demonstrate a desire on the behalf of Canadians to be mindful of their environmental impact.

The finding that age-range (H5d) was significant for "Both Individuals" and "Individual 1" demonstrates that the older respondents were more likely to select either of the two options. This finding is not particularly enlightening as the two categories

above represented the only two legitimate response categories for this hypothesis. If the two were significant, but one was negatively related and one was positively related, a more meaningful interpretation could have been made.

H3a1 and H3a2,

The support for H3a2 but not for H3a1 indicates that the cost to the individual, regardless of proportion of income, is not a significant factor in the evaluation of EFAs. The results of H3a2 were as predicted: when the proportion of income spent on an EFA was roughly the same for both individuals the actual amount spent was not a significant factor, demonstrating that two individuals who are making the same objective sacrifice are equal. The flip-side of this hypothesis (H3a1) was that when the monetary amounts are equivalent, but the proportions of income are different between the two individuals, that the individual who is making a bigger objective sacrifice should be perceived as more prize-worthy. This was not substantiated. The logic behind the original hypothesis was that if one compares Mother Teresa to an individual who spent one day volunteering in a hospital, the individual more worthy of praise should be clear.

Interestingly, the findings from H3a2, H3b, and H4 may provide some insight into the logic behind this result. The results from H3a2 demonstrated that people who sacrifice equally are equally worthy of praise, the results from H3b indicate that the nature and magnitude of the EFA are not significant evaluation criteria for EFAs, and the results from H4 indicate that the passing of time has no effect on the praiseworthiness of an EFA. Given that time appears not to affect the evaluation of EFA's (i.e what Mother Teresa did is no less impressive today than it was 30 years ago), and that anyone doing

anything environmental seems to be equally praiseworthy regardless of differences in the magnitude of the act (the interpretation of results from H3a1, H3b), it would seem that the cost associated with performing an EFA is not a significant factor in its evaluation. This makes sense, given that differences in cost can be seen as a form of magnitude. It is possible that the examples provided did not have a large enough difference in proportion to be seen as drastically different, or that the amounts of money spent in both cases were so large that both individuals deserved praise regardless of the proportional sacrifice. It is also possible that respondents who selected "both individuals" are either not informed enough about the environmental issues, or are not sensitive enough to them. Further research could create a wider proportion gap while lowering the cost to a point that is less praiseworthy.

H3b

The analysis for H3b yielded a non-significant result. The interpretation of this is that all EFAs are weighted equally. This was counter to the proposed hypothesis, as it was assumed that prosocial acts of different magnitudes (i.e buying organic lettuce as opposed to buying a hybrid car) would be evaluated differently in terms of which is most worthy of praise / reward. It is possible that because the environmental crisis has only recently become a popular issue, anybody doing anything environmentally friendly is seen as being praiseworthy. As H3b was insignificant, an elaborated discussion of the meaning behind the significant results from the multinomial logistic regression will be forgone.

H4

The lack of significance of this result may be explained by the recency with which the environment became a salient issue is moderating these relationships, and so currently anybody doing anything environmentally friendly is perceived to be worthy of praise. This finding also demonstrates that performing an altruistic act has an effect on how observers perceive the actor, and that the effect does not fade on account of time.

H5e and H5f

Income and own education were not found to be significant moderators or mediators in any hypotheses. These variables were initially included simply as controls, but given that previous studies had explored their impact with mixed results it was decided that they should be included as hypotheses. The role of Perceived Consumer Effectiveness will be discussed in a subsequent section, and the reasons why pure demographic variables may not be sufficient to define a "green sector" of individuals will be elaborated.

Intercept

Intercept

The significance of the intercept was not elaborated because the practical interpretations of its effects were not relevant. The intercept represents when the independent variable is set to 0, however when dealing with non-continuous variables such as demographics, the point at which gender (for example) is set to '0' is not meaningfully interpretable.

LIMITATIONS

Study Design

While the rationale for not including an "award no one" option in each scenario question was sound, it introduced an unforeseen confound into the analysis. Upon reviewing the results, it appears as though the three response categories (Both Individuals, Individual 1, and Individual 2) may not have been sufficient to allow respondents a full range of choices. If respondents felt that a particular EFA was not worthy of praise, regardless of whether a difference existed between the extent to which individuals performed it, the only option they had was to award "both individuals". This is troubling as it makes extrapolating meaning from the "both individuals" category virtually impossible as it can either mean that both individuals were equally praiseworthy, or neither was.

A further limitation to the design can be found in the exclusion criteria set in the online survey creation interface. H5b explored the impact that having an educated mother had on the propensity to condone environmental moral licensing, and as such having a sample with 50% educated mothers may have increased the probability that a significant relationship would have been detected. Unfortunately this was not set as an exclusion criteria (as it was with gender), and so only 29% of the final response pool reported having an educated mother.

Data

The lack of observational or purchase data potentially reduces the validity of the results even though efforts were taken to circumvent the limitations inherent in straight

self-report measures. As well, given that the sample is entirely Canadian, there are potential issues of generalizability across different nationalities and cultures; especially as the strength of SDB has been found to be culturally variable (Dunn & Shome, 2008). Furthermore, there may have a problem with the sample pool. The individuals who form the subject pool are all individuals who have signed up to be paid $2 per completed survey. Given this commonality it is fair to assume that the motivation behind wanting to earn $2 may be indicative of confounding demographic factors such as low SES, which has been correlated with many different attitudinal and behavioural variables. Although income and education were controlled for, the nature of anonymous self-report data affords respondents the opportunity to lie without consequence. Finally, there may have been subjects who responded at random or purposefully contrary to the spirit of the questions. This is evidenced by the fact that some individuals chose the 'wrong' option on control questions. One example of this was that if given the choice to award a person who recycled versus one who did not, the subject chose the person who did not. This is an inherent risk in using an online survey company that pays participants based on completion.

Multinomial Logistic Regression

The two major statistical limitations to using a multinomial logistic regression when analyzing data sets with many variables are the issue of sparse data and that of multiple hypothesis testing. Sparse data can impact analyses in that certain cells of the cross-tabulation are 'empty', in that there are not enough cases where specific combinations of variables will exist within the sample. An example of this would be, in the case of this study, males between 18-25 earning over $150,000 per year with an

educated mother but with no education themselves. This can cause estimation problems, meaning that the associated regression coefficients are unstable. Multiple hypothesis testing impacts the analysis in that when many hypotheses are tested using a common sample certain relationships, and regression coefficients, will be significant due to sampling variation. This significance is not representative of a meaningful result, and cannot be generalized to a greater population.

Social Desirability Bias

The SDB represents a major source of potential error. Even after attempting to create questions that reduce the propensity for SDB, it is still conceivable that some respondents will feel that if they do not award the prize to a certain individual they will appear to be environmentally insensitive. To control for these individuals, a combination of the MCSDS and the differentiation between moralistic and egoistic biases described by Paulhus & John would need to be employed. Furthermore, as women are more likely to exhibit SDB (Lusk & Norwood, 2009), a gender control would also be advisable.

Potential moderators and mediators

While efforts were made to include controls for as many significant moderators and mediators as possible, given the scope of the project, certain controls were not analyzed. A possible mediator may be the respondents' industry of employment; it is possible that this may further moderate the effect of SES on evaluation of EFAs. For example: if an individual works for Parks Canada, but has a low SES, they may still hold a particularly strong ecological worldview and as such be more likely to engage in more

EFAs, irrespective of cost. Conversely, if an individual has a very high SES but works for an oil company they may have a somewhat weaker ecological worldview and as such the value they place on EFAs may be significantly lower.

AREAS FOR FUTURE RESEARCH

NEP vs. PCE

The choice to use the NEP scale was made because it had been cited over a thousand times and was lauded as to be a reliable measure of ecological worldview. Another moderator to consider may be psychographic variables such as Perceived Consumer Effectiveness (PCE). Straughan and Roberts (1999) claim that while adding a measure of altruism adds significantly to the understanding of environmentally friendly behaviour, psychographic criteria are a more useful method of profiling than demographic criteria and can be measured by scales such as the PCE scale. The PCE scale measures an individual's judgment regarding the ability of a consumer to affect environmental resource problems (Roberts, 1996) and it may provide significant insight into ecologically conscious behaviour by further refining the understanding of what motivates individuals to perform EFAs (Straughan & Roberts, 1999). Other studies support the finding that environmentally friendly purchase behaviour is, in part, a function of one's belief in their ability to make a difference (Kim & Choi, 2004; Webb et al., 2008), which has been shown to vary across cultures.

The present study focused on a person's evaluation of EFAs being performed by others as a proxy for what actions the subjects would likely take themselves. Future researchers may benefit from extending this logic to determine whether a relationship exists between an individual's ecological worldview and their PCE level, and furthermore whether this relationship is mediated or moderated by any other demographic or psychographic variables. Such a finding would allow marketers to more effectively target

specific strata of individuals who both believe in their ability to positively effect change and who are already in an environmentally friendly mindset. The product sectors that might benefit the most from these findings would be those that can genuinely help the environment through implementation or use of a product (such as reusable grocery bags) as opposed to sectors wherein the supposed environmental benefit is in the purchase (such as organic vegetables).

Price

Additionally of interest would be what role price plays in this equation. What demographic and or psychographic variables affect the evaluation of price in relation to quality and / or desirability? If a product is more expensive, but the individual holds a strong ecological worldview and believes that they can make an environmental difference, will the higher price be as much of a detractor? In keeping with Costly Signaling Theory (Price, 2003), higher prices on specific environmental products might have an attractive effect whereby the targeted consumer uses the purchase and use / display of the product as a status signal.

Purchase data

Once the relationships mentioned above have been researched and the structure behind environmentally friendly behaviour is further developed, it would be advantageous for researchers to embark on a wider within-subjects design that incorporated both self-report and evaluative data as well as purchase / product use data. This would enhance the validity and generalizability of the dynamics that influence the relationship between environmentally friendly belief and behaviour. It would be

especially important to determine if there is a particular segment of the population who buy environmentally friendly products in a public setting but do not actually use them in a way that is environmentally friendly.

Can businesses capitalize on the intangible moral currency?

There is a marketing adage that says "People don't buy quarter-inch drill bits, they buy quarter-inch holes". In other words: the consumer purchases an outcome, not an object. In the case of environmentally friendly products, part of the added value that consumers purchase is the moral currency that can be used to offset past, present, or future environmentally unfriendly acts. Is it possible that a company might use this in their advertising to modify purchasing habits? For example, if as described above a grocery store were to advertise specific product substitutes that, if bought, would reduce or completely offset a buyer's carbon footprint, they then could advertise a luxury product to the individual under the guise of "You've done good today, you should reward yourself". Conversely, research must also examine whether the conscious acknowledgement of the moral currency decreases or nullifies the value of that currency.

The creation of an index to classify the licensing value of given acts / purchases.

While the current study did not find evidence that certain purchases (a hybrid car) earn the buyer more moral currency than others (organic lettuce), it is plausible that these types of differentiations may arise as mitigating climate change becomes more engrained in societal norms. At that point it would be logical to assume that there would be discernable categories into which different environmentally friendly acts or purchases fall, and that these categories would be differentiated by level of moral currency

obtained. This would be very useful for future pricing and promotion options, particularly if the moral currency remained as valuable once made public. This could introduce a second level of product pricing into the marketplace, where there is the dollar cost *and* the 'green savings'. Consumers, or at least specific segments, may be willing to pay slightly more if the 'green savings' are significantly higher. This is already prevalent throughout the marketplace for environmental niche products that appeal to individuals willing to pay more; however, a wider understanding of the mechanisms and strata of the licensing value would enable it to be tailored to a more generalized target audience, thus increasing the sales of environmentally friendly goods.

Alternatively retailers and producers could operationalize the licensing value in the form of systems such as green reward points, wherein when a person acquires X points a tree is planted on their behalf offsetting X percent of their yearly carbon emissions. This index could also help the service industry in the same way by easing the creation of environmentally friendly initiatives that engage individuals to participate rather than relying on guilt (images of oil-soaked birds) or fear (fines for littering), Moreover, governments could develop greener public service initiatives with higher participation rates using a modified points system utilizing tax reductions, scaled by participation, as a means of reward.

What are the limits to spending moral licensing, and what are the moderators / mediators?

The data suggests that individuals performing EFAs are evaluated more positively than those who don't; that people can offset EUAs with EFAs; and, that the EUA need not be related to the EFA. A useful question to ask would be what the parameters are for

using the amassed moral currency. As mentioned above, the notion of spending this publically as opposed to privately is an area of great potential. For example, it is possible that performing an EFA means that you can be publically less environmentally friendly, or that you gain the ability to privately reward yourself by making an equivalently unfriendly act. Or it is possible that moral currency is more valuable if it is laundered for you by a third party who offers you tangible rewards for your purchase-related EFAs (i.e eco reward points programs). Finally, it may be that showing off your eco-friendliness reduces your social status as opposed to it being enhanced when people inconspicuously observe the EFA.

Other variables

Further studies should take into account the relationship status of the respondent. It is plausible that when individuals are seeking to signal qualities to prospective mates they may attempt to display qualities that would make them appear more likely to be a good partner, and one of the ways they do this is by publically performing altruistic acts. As such, relationship status may be correlated with the propensity to perform – and reward – EFAs.

Higher level factor

By way of a PCA and FA, the 15-point NEP scale was reduced to three orthogonal factors. It would have been too complex to determine whether these three factors were related to a higher level factor, as it would have required applying a hierarchical factor analysis using structural equation modeling. This approach, however, would be recommended for further analysis as it may provide enhanced understanding of

the relationship between an individual's ecological worldview and their propensity to reward environmentally friendly acts.

CONCLUSION

There are many possible avenues of exploration with regard to future research and development in this area. Once further research is conducted, and if that research concurs with these findings, marketers will have new and possibly very advantageous avenues of appealing to potential consumers of environmentally friendly products. Assuming that the products sold are actually advantageous for the environment, the increase in sales will be a win-win-win for producers, consumers, and the stability of our global climate. The advantage of this lies in a future where individuals can feel pride at leveraging their purchasing power for altruistic ends while obtaining goods that meet their needs and wants.

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APPENDIX 1

Correlations

			Scenario 2	Scenario 11 (r)	Scenario 1	Scenario 3	Scenario 5	Scenario 6	Scenario 8	Scenario 9	Scenario 13 (r)	Scenario 12 (r)	Scenario 4 (r)	Scenario 14 (r)	Scenario 10 (r)	Scenario 7 (r)
Spearman's rho	Scenario 2	Correlation Coefficient	1.000	.238**	.253**	.091*	.163**	.438**	.064	.096*	.138**	.200**	.041	.132**	.138**	.079
		Sig. (1-tailed)	.	.000	.000	.045	.001	.000	.118	.037	.005	.000	.223	.007	.005	.070
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 11 (r)	Correlation Coefficient	H1 .238**	1.000	.147**	.135**	.116*	.208**	.200**	.185**	.280**	.217**	.126**	.211**	.252**	.209**
		Sig. (1-tailed)	.000	.	.003	.006	.015	.000	.000	.000	.000	.000	.009	.000	.000	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 1	Correlation Coefficient	.253**	.147**	1.000	.066	.047	.330**	.090*	.068	.195**	H2b .144**	.173**	.046	.049	.123*
		Sig. (1-tailed)	.000	.003	.	.109	.188	.000	.047	.102	.000	.003	.001	.197	.179	.011
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 3	Correlation Coefficient	.091*	.135**	.066	1.000	.011	.077	.124*	.158**	.069	.107*	.211**	.114*	H3b .136**	.354**
		Sig. (1-tailed)	.045	.006	.109	.	.418	.076	.010	.002	.098	.023	.000	.017	.005	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 5	Correlation Coefficient	.163**	.116*	.047	.011	1.000	.155**	.156**	.228**	.093*	.169**	.176**	.191**	.223**	H4 .088*
		Sig. (1-tailed)	.001	.015	.188	.418	.	.002	.002	.000	.042	.001	.000	.000	.000	.049
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 6	Correlation Coefficient	.438**	.208**	.330**	.077	.155**	1.000	.076	.124*	H2a .223**	.316**	.089*	.099*	.094*	.102*
		Sig. (1-tailed)	.000	.000	.000	.076	.002	.	.079	.010	.000	.000	.049	.032	.040	.028
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 8	Correlation Coefficient	.064	.200**	.090*	.124*	.156**	.076	1.000	.151**	.161**	.144**	.242**	H3a2 .566**	.224**	.237**
		Sig. (1-tailed)	.118	.000	.047	.010	.002	.079	.	.002	.001	.004	.000	.000	.000	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 9	Correlation Coefficient	.096*	.185**	.068	.158**	.228**	.124*	.151**	1.000	.183**	.090*	H3a1 .550**	.262**	.257**	.241**
		Sig. (1-tailed)	.037	.000	.102	.002	.000	.010	.002	.	.000	.047	.000	.000	.000	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 13 (r)	Correlation Coefficient	.138**	.280**	.195**	.069	.093*	.223**	.161**	.183**	1.000	.204**	.197**	.086	.107*	.105*
		Sig. (1-tailed)	.005	.000	.000	.098	.042	.000	.001	.000	.	.000	.000	.054	.022	.025
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 12 (r)	Correlation Coefficient	.200**	.217**	.144**	.107*	.169**	.316**	.144**	.090*	.204**	1.000	.142**	.030	.188**	.168**
		Sig. (1-tailed)	.000	.000	.003	.023	.001	.000	.004	.047	.000	.	.004	.291	.000	.001
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 4 (r)	Correlation Coefficient	.041	.126**	.173**	.211**	.176**	.089*	.242**	.550**	.197**	.142**	1.000	.296**	.273**	.265**
		Sig. (1-tailed)	.223	.009	.001	.000	.000	.049	.000	.000	.000	.004	.	.000	.000	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 14 (r)	Correlation Coefficient	.132**	.211**	.046	.114*	.191**	.099*	.566**	.262**	.086	.030	.296**	1.000	.185**	.274**
		Sig. (1-tailed)	.007	.000	.197	.017	.000	.032	.000	.000	.054	.291	.000	.	.000	.000
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 10 (r)	Correlation Coefficient	.138**	.252**	.049	.136**	.223**	.094*	.224**	.257**	.107*	.188**	.273**	.185**	1.000	.129*
		Sig. (1-tailed)	.005	.000	.179	.005	.000	.040	.000	.000	.022	.000	.000	.000	.	.008
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	Scenario 7 (r)	Correlation Coefficient	.079	.209**	.123*	.354**	.088*	.102*	.237**	.241**	.105*	.168**	.265**	.274**	.129*	1.000
		Sig. (1-tailed)	.070	.000	.011	.000	.049	.028	.000	.000	.025	.001	.000	.000	.008	.
		N	350	350	350	350	350	350	350	350	350	350	350	350	350	350

Relevant Correlations

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

APPENDIX 2

Evaluating Environmentally Friendly Acts

Introduction

Dear Participant,

Thank you for taking the time to answer this short questionnaire.

The purpose of this questionnaire is to assess consumer evaluations of environmentally friendly acts and direct future research in this area. Your answers are strictly anonymous and no backtracking of your personal data is possible.

When answering each question in the non-demographic section there are a range of different answer possibilities (Strongly Agree – Mildly Agree – Neither Agree or Disagree – Mildly Disagree – Strongly Disagree) amongst which you can choose. Please click the answer possibility of which you think is the most appropriate. There are no right or wrong answers - we are only interested in your personal opinion.

The results of this questionnaire will be published as a research thesis at Concordia University and may be reported as a research article. In addition, an anonymous benchmark report can be received via "Surveylion" after completion of this survey. This will enable you to compare your personal answers given with those of other participants.

Your efforts in completing this questionnaire are much appreciated; however, participation is completely voluntary. If at any time you do not wish to continue, you may exit the survey.

Sincerely,

Jameson Jones-Doyle,
M.Sc Programme, Concordia University, Montreal, QC

Are you male or female?

- ○ Male
- ○ Female

In what age range do you fall?

- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65 or Above

What range best describes your yearly income?

- ○ $0 - $25,000
- ○ $25,001 - $50,000
- ○ $50,001 - $75,000
- ○ $75,001 - $100,000
- ○ $100,001 - $150,000
- ○ $150,000 +

What level of education have you completed?

- ○ High School or Equivalent
- ○ College
- ○ Undergraduate
- ○ Graduate

Does your mother have an undergraduate degree or higher?

- ○ Yes
- ○ No

Listed below are statements about the relationship between humans and the environment. For each one, please indicate whether you agree or disagree using the scale below:

	Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
1. We are approaching the limit of the number of people the Earth can support.	○	○	○	○	○
2. Humans have the right to modify the natural environment to suit their needs.	○	○	○	○	○
3. When human interfere with nature it often produces disastrous consequences.	○	○	○	○	○
4. Human ingenuity will ensure the we do NOT make the earth unlivable.	○	○	○	○	○
5. Humans are severely abusing the environment	○	○	○	○	○
6. The earth has plenty of natural resources if we just learn how to develop them.	○	○	○	○	○
7. Plants and animals have as much right as humans to exist.	○	○	○	○	○
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	○	○	○	○	○
9. Despite our special abilities humans are still subject to the laws of nature.	○	○	○	○	○
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated.	○	○	○	○	○
11. The earth is like a spaceship with very limited room and resources.	○	○	○	○	○
12. Humans were meant to rule	○	○	○	○	○

over the rest of nature.

13. The balance of natures is very delicate and easily upset.	○	○	○	○	○
14. Humans will eventually learn enough about how nature works to be able to control it.	○	○	○	○	○
15. If things continue on their present course, we will soon experience a major ecological catastrophe.	○	○	○	○	○

Consider the following scenarios and answer the questions that follow. In each scenario you will be asked to compare the behaviours of two individuals; these individuals are identical in every way except for the information provided.The scenarios are unrelated.

Scenario 1) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'A' drives an SUV and buys organically grown vegetables and eco-friendly products for their home. Individual 'B' drives an SUV and does not buy organically grown vegetables or eco-friendly products for their home.

○ Both individuals equally deserve to be awarded the prize.

○ Individual A should be awarded the prize

○ Individual B should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 2) A prize MUST be awarded for environmental friendliness and social responsibility to <u>at least one</u> individual mentioned below.

Individual 'C' decides to ride a bicycle to work and back every day for one month (total = 250km). Individual 'D' drives to work and back every day for one month (total = 250km).

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual C should be awarded the prize
- ○ Individual D should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 3)A prize MUST be awarded for environmental friendliness and social responsibility toat least one individual mentioned below.

Two years ago individual 'E' went to the store and spent $100 on eco-friendly products. Last week, individual 'F' went to the store and spent $100 on eco-friendly products.Neither individual had made any prior eco-friendly purchases, and neither has made any since.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual E should be awarded the prize
- ○ Individual F should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 4) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'G' donates $10,000 to a local composting group, which represented 2% of their total income. Individual 'H' donates $10,000 to a local composting group, which represented 28% of their total income.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual G should be awarded the prize
- ○ Individual H should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 5) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'I' buys a hybrid car instead of a Hummer. Individual 'J' buys organic lettuce instead of regular lettuce.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual I should be awarded the prize
- ○ Individual J should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 6) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'K' drives a hybrid car to work and back every week (total = 105km) Individual 'L' drives a regular car to work and back every week (total = 105km).

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual K should be awarded the prize
- ○ Individual L should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 7) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Yesterday individual 'M' made a donation of $50 to Greenpeace.Five years ago individual 'N' made a donation of $50 to Greenpeace.Neither individual had made any prior eco-friendly donations, and neither has made any since.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual M should be awarded the prize
- ○ Individual N should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Consider the following scenarios and answer the questions that follow. In each scenario you will be asked to compare the behaviours of two individuals; assume that these individuals are identical in every way except for the information provided. The scenarios are unrelated.

Scenario 8) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'O' donated $500 to Wildlife Canada, which represented 40% of their total income.Individual 'P' donated $5000 to Wildlife Canada, which represented 39.99% of their total income.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual O should be awarded the prize
- ○ Individual P should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 9) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'Q' spends $3,000 per year on eco-friendly purchases, which represented 30% of their total income.Individual 'R' spends $3,000 per year on eco-friendly purchases, which represented 3% of their total income.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual Q should be awarded the prize
- ○ Individual R should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 10) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'S' insulates one of their basement windows to reduce heat loss in winter.Individual 'T' converts their house to rely solely on solar and geothermal energy.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual S should be awarded the prize
- ○ Individual T should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 11) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'U' does not recycle for the month of May.Individual 'V' recycles every day for the month of May.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual U should be awarded the prize
- ○ Individual V should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 12) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'W' flies from Montreal to California for two-week vacation.Individual 'X' flies from Montreal to California for a two-week vacation. During their stay they volunteer at a local recycling co-op.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual W should be awarded the prize
- ○ Individual X should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 13) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'Y' air-conditions a 900 square foot house for a month.Individual 'Z' air-conditions a 900 square foot house for a month, but makes an effort to turn off lights when they are not in the room.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual Y should be awarded the prize
- ○ Individual Z should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

Scenario 14) A prize MUST be awarded for environmental friendliness and social responsibility to at least one individual mentioned below.

Individual 'Ω' paid to have 4000 new trees planted, which represented 30% of their total income.Individual 'π' paid to have 400 new trees planted, which represented 30.01% of their total income.

- ○ Both individuals equally deserve to be awarded the prize.
- ○ Individual Ω should be awarded the prize
- ○ Individual π should be awarded the prize

How strongly do you feel about your choice?

Strongly Agree	Agree	Are Unsure	Disagree	Strongly Disagree
○	○	○	○	○

APPENDIX 3

Communalities

	Initial	Extraction
NEP1	.346	.425
NEP2	.291	.348
NEP3	.334	.384
NEP4	.247	.289
NEP5	.484	.547
NEP6	.283	.426
NEP7	.440	.524
NEP8	.376	.451
NEP9	.215	.232
NEP10	.385	.410
NEP11	.412	.590
NEP12	.336	.364
NEP13	.325	.346
NEP14	.329	.413
NEP15	.512	.564

Extraction Method: Principal Axis Factoring.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.581	30.540	30.540	4.030	26.865	26.865	2.815	18.765	18.765
2	2.139	14.262	44.802	1.544	10.291	37.156	2.357	15.714	34.479
3	1.273	8.485	53.287	.742	4.945	42.100	1.143	7.621	42.100
4	.886	5.908	59.194						
5	.775	5.165	64.360						
6	.739	4.928	69.287						
7	.687	4.578	73.866						
8	.634	4.226	78.091						
9	.597	3.977	82.068						
10	.543	3.618	85.686						
11	.490	3.268	88.954						
12	.457	3.050	92.004						
13	.431	2.877	94.880						
14	.427	2.844	97.725						
15	.341	2.275	100.000						

Extraction Method: Principal Axis Factoring.

Rotated Factor Matrix[a]

	Factor		
	1	2	3
NEP1	.405	.013	.510
NEP2	-.209	.551	.022
NEP3	.602	-.123	.075
NEP4	-.021	.519	-.139
NEP5	.707	-.187	.115
NEP6	.188	.452	-.432
NEP7	.698	-.192	-.006
NEP8	-.075	.644	-.177
NEP9	.478	-.004	.060
NEP10	-.304	.544	-.148
NEP11	.371	-.104	.665
NEP12	-.259	.543	.051
NEP13	.525	-.118	.238
NEP14	-.067	.638	.043
NEP15	.640	-.236	.314

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.