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Norms of Un-Sustainability: Significant, Yet Overlooked, Factors Inhibiting the Adoption of Environmental Solutions

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Abstract

This study discusses the need for a new approach for addressing environmental issues – because current approaches are either not working or not working at a significant scale – and the role of individuals in both creating and resolving environmental issues. An analysis of the social nature of individual decision-making, with an emphasis on social and descriptive norms, is presented to provide background in the subject that serves as the fundamental topic behind this paper's main argument. Empirical research then offers an opportunity to demonstrate not only the presence of undesirable (largely descriptive) norms that foster unsustainable individual decision-making and habits, but also the inability of individuals to recognize the role of such norms on their behavior. After analyzing the results of a study conducted at the University of Oxford in July 2011 addressing the presence of unsustainable norms, the paper concludes by stressing the advantages of using the power of norms to more effectively address environmental issues.

Subject Categories

Behavioral Economics | Environmental Studies | Politics and Social Change | Social Psychology

Norms of Un-Sustainability:
Significant, Yet Overlooked, Factors Inhibiting the Adoption of Environmental Solutions

Philosophy, Politics, Economics (PPE) Department Honors Thesis

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Introduction

This paper discusses the presence and role of certain norms that foster unsustainable individual behavior and inhibit sustainable behavior with the aim of illustrating their ability to prevent the adoption of solutions to the emerging environmental issues that will undermine modern way of life. Others factors, such as cognitive processes, that reinforce these norms and thereby obstruct the ability for sustainable solutions[1] to be adopted are also explored. The underlying question that prompts the topic of this paper is this: what is preventing the adoption of the sustainable solutions that are expected to bring numerous benefits for the economy, environment, and overall quality of life? It will be argued that modern society possesses an ingrained set of undesirable norms – further entrenched by individual cognitive processes – that promote an unsustainable way of life and that these norms create barriers inhibiting the widespread adoption of preferable, sustainable solutions. Moreover, these undesirable (unsustainable) norms largely remain intact as a result of normative expectations individual hold of others that either foster unsustainable behavior or hinder the adoption of more sustainable behavior. Hence, it appears that descriptive norms are a hindrance for sustainability. It will thereby be contended that a society that adopts sustainable norms would reduce such barriers and cultivate solutions to emerging environmental issues.

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[1] My use of the term '*sustainability*' refers to the *process* by which individuals (or society) may make progress toward reducing their detrimental impact on the natural environment and natural resources. A '*sustainable solution*' (and related terms) thereby refers to that which will lead to energy and water conservation, reductions in pollution, enhanced natural resource management, and the like. Similarly, an '*unsustainable norm*' alludes to the set of normative and empirical expectations of behavior that has a detrimental environmental impact, while a '*sustainable norm*' signifies the expectations that foster behavior which reduces the detrimental impact of individuals (and society) on the environment.

The paper includes several components. An argument is presented on the need for a new approach for addressing environmental issues since current approaches are either not working or not working at a significant scale. The philosophical understanding being utilized in this paper pertaining to the role of individuals in driving environmental issues is then offered to establish the fundamental framework for the rest of the paper. An analysis of the social nature of individual decision-making, with an emphasis on social and descriptive norms, is presented to provide background in the subject that serves as the fundamental topic behind this paper's main argument. Empirical research then offers an opportunity to demonstrate not only the presence of undesirable (largely descriptive) norms that foster unsustainable individual decision-making and habits, but also the inability of individuals to recognize the role of such norms on their behavior. After analyzing the results of a study I conducted at the University of Oxford in July 2011 addressing the presence of unsustainable norms, the paper concludes by stressing the advantages of using the power of norms to more effectively address environmental issues.

The Demand for a New Approach to Address Environmental Issues

Sustainability will be a recurring topic of debate in the coming years as nations determine how best to lay foundations for future growth given increasing global demand for scarce resources, resulting from growing population and standard of living, as well as the depletion and degradation of essential resources. As it stands today, however, solutions that have passed into law pertaining to environmental sustainability are not working, are not working quickly enough, or are not succeeding at a large enough scale. Additionally, measures that help society achieve vast

improvements in sustainability are unlikely to pass into law at present due to the composition of national legislatures, limited budgets, and lagging leadership on this issue. It is therefore necessary to develop creative, politically viable, and cost-effective solutions that will strengthen the environment and economy. This will help lay the foundation for sustainable societies and economies that ensures a high standard of living like that which many people now enjoy will remain possible indefinitely, and that the opportunity will remain available for those aspiring to improve their quality of life.

While behavioral change will not be entirely sufficient on its own to develop sustainable societies and economies, it must be addressed in order for sustainability goals to be reached and can make a significant contribution towards reducing the impact of each individual on the environment. Moreover, a culture that places importance on sustainability will offer a setting more conducive to the other necessary changes that is required, such as those pertaining to technology. It is argued in this paper that by making use of research on how individuals make decisions, it will become possible to develop more effective methods for achieving sustainability goals. Thus, in order to identify opportunities for solutions, the factors that both impede the widespread adoption of sustainability and foster the continuation of unsustainable behavior at the individual decision-making level must be addressed. The purpose of this paper is thereby to set the stage for developing effective sustainable solutions by diagnosing the factors that help explain the insufficient progress by individuals, societies, and nations in becoming sustainable.

The Role of Individuals

In developing a diagnosis for the factors inhibiting the widespread adoption of sustainability, it is necessary to identify the entities for which these factors affect. This paper holds the position that the majority of environmental issues – from pollution, to natural resource depletion and degradation, to climate change, etc. – are the result of the decisions made by and behavior of individual persons and the institutions that the aggregate of individuals have built. Furthermore, it is held that the continued presence of undesirable, unsustainable individual behavior is due to the influence and power of individual decision-making (cognitive) processes.

This paper thus brings to the forefront of the debate between methodological individualism and methodological holism. Methodological individualism is the notion that social phenomena and events can be explained by being deduced to the behavior of individuals and the situations in which individuals find themselves. It explains "social processes in terms of complex interactions among individual agents" [Guala 279]. Methodological individualism is thereby a "specific form of reductionism" and hence "demands that an event at level x should always be explained on the basis of a general theory about phenomena occurring at a lower level of analysis" [Van Hees 294]. As argued by Friedrich Hayek, there "is no other way toward an understanding of social phenomena but through our understanding of individual actions directed toward other people and guided by their expected behavior" [Lukes 284]. Furthermore, every complex social situation, institution, or event "is the result of a particular configuration of individuals, their dispositions, situations, beliefs, and physical resources and environment" [Lukes 284].

Methodological holism, on the other hand, is the idea that social phenomena and events can be deduced from the macroscopic level and that individuals play a set role within this larger framework. Social facts are suggested to construct a force that shapes the way in which people perceive the world and those around them.

It is necessary to utilize methodological individualism in order to understand the factors inhibiting the widespread adoption of sustainability. The factor that will be primarily discussed is *norms*. While many people may argue that the theme of this paper – norms – should be considered a holistic account for social phenomena, norms should instead be understood from a methodological individualistic account. Because norms result from the aggregation of the *expectations* that individuals hold of other people and because, as a result of evolution, human cognition urges individuals to conform, individuals will follow norms when norms are triggered. The numerous everyday decisions an individual makes are not based are macroscopic laws for behavior but rather the cognition of the brain of each individual in response to the surrounding environment, the situations an individual encounters, and the people an individual interacts with. In fact, the power of norms is solely based on the beliefs individuals have of others and if these individual beliefs change it is possible for a norm to unravel. Were norms a holistic phenomenon then it would not be possible for norms to break down following a change in *individual* expectations. Methodological individualism therefore provides the proper account for the social phenomena – such as norms – investigated in this paper that inhibit the adoption of sustainable behavior and foster unsustainable behavior. To better interpret the impact of these phenomena on sustainability it is thus necessary to gain an enhanced understanding of individual decision-making processes.

Individual Decision-Making

Since the root of environmental problems can be reduced to the individual actor, in developing solutions to achieve a more sustainable future it is necessary to employ strategies that will reduce the environmental impact of such individual actors. Knowledge from cognitive, behavioral, and other social sciences is thereby essential for determining the most effective methods for inducing more sustainable individual behavior. Thus, sustainable solutions must, in order to be effective, make use of what is known about how individuals make decisions.

It is argued that individuals make decisions using either one of two cognitive processes. System 1 processes are those that "are fast, automatic, effortless, associative, and often emotionally charged; they are also governed by habit, and are therefore difficult to control or modify" [Kahneman 232]. They respond to cues, are largely subconscious, and have been developed through evolution. When an individual is being chased by something in the wild, the automatic response is to run away as fast as possible. On the other hand, System 2 processes are cognitive functions that "are slower, serial, effortful, and deliberately controlled; they are also relatively flexible and potentially rule-governed" [Kahneman 232]. System 1 processes are the favored option of the two: most decisions are in fact made with System 1 processes rather than System 2 processes – cognitive functions that are effortful, slow, and require more thinking. Individuals thus hold a (subconscious) preference for making decisions using System 1 processes and shirk from that which involves System 2 processes. People "are not accustomed to thinking hard, and are often content to trust a plausible judgment that quickly comes to mind" [Kahneman 231]. Since System 1 processes are the preferred (automatic) decision-making process and are made with little thought or awareness,

individual decision-making is susceptible to various external factors, such as reference points, framing, biases, availability, context, and other heuristics.

System 1 processes are a perceptual system of cognition. As such, because individual decision-making favors System 1 processes and because perception "is reference dependent," individuals therefore make most decisions in response to context [Kahneman 237]. Furthermore, the behavior of individuals "is not guided by what they are able to compute, but by what they happen to see at a given moment" [Kahneman 243]. Individuals will perceive a context based on what is accessible and, as a consequence of this perception, respond mechanically and without much thought.

This general background on the factors that shape individual decision-making provides insight on that which inhibits the adoption of sustainable behavior and fosters unsustainable behavior. Moreover, the preference for System 1 cognition demonstrates an opportunity for reversing undesirable (unsustainable) behavior and cultivating desirable (sustainable) behavior. In order to take advantage of this opportunity, it is helpful to make use of research on the components that affect an individual's perception of and response to a given stimulus.

Moral Suasion, Nudges, and MINDSPACE

Moral suasion falls within a general taxonomy of state intervention for addressing environmental issues that ranges from *free market* at one end to *nationalized delivery* at the other end and is situated in the portion of the spectrum closest to *free market* [Hepburn 121]. Moral suasion can be described as government providing and possibly seeking to "persuade people and firms to change their preferences and objectives" [Hepburn 121]. Excitement over this category of environmental solutions

is that moral suasion "can lead to low cost, low pain ways of 'nudging' [individuals] into new ways of acting by going with the grain of how we think and act. This is an important idea at any time, but is especially relevant in a period of fiscal constraint" [Dolan *7*].

Nudges provide a means by which sustainable behavior can be encouraged and unsustainable behavior discouraged. In their work titled *Nudge*, Richard Thaler and Cass Sunstein research the concept and applications of *libertarian paternalism* to learn more about how choice architecture shapes the way in which people make decisions with the aim of improving the ability of people to make decisions that will make their lives "longer, healthier, and better" [Thaler 5]. In general, "individuals make pretty bad decisions – decisions they would not have made if they had paid full attention and possessed complete information, unlimited cognitive abilities, and complete self-control" [Thaler 5]. By giving people a *nudge* – via priming, changing the framing of a situation, providing incentives, offering more information, changing 'defaults', etc. – people's behavior can be altered so as to encourage them to make the choice that is their own best long-term interest (without infringing on their right to choose as they so please). The purpose of the book is not for "bigger government, just for better governance" [Thaler 14]. As such, Thaler and Sunstein want to find opportunities to facilitate good behavior by removing obstacles that inhibit such behavior.

Nudges toward preferable (in this case, 'sustainable') behavior can be achieved using the power of MINDSPACE. Research by Dolan, et al. offers this simple mnemonic for the following set of the nine most robust (non-coercive) influences on behavior as a checklist for making effective policies.

Messenger	We are heavily influenced by who communicates information
Incentives	Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses
Norms	We are strongly influenced by what others do
Defaults	We 'go with the flow' of pre-set options
Salience	Our attention is drawn to what is novel and seems relevant to us
Priming	Our acts are often influenced by sub-conscious cues
Affect	Our emotional associations can powerfully shape our actions
Commitments	We seek to be consistent with our public promises and reciprocate acts
Ego	We act in ways that make us feel better about ourselves

[Dolan 8]

These factors affect the way in which individual decisions are made and can thus be used as tools to nudge individuals in a non-coercive manner toward making preferable choices. Moreover, they can serve as core tools for policy pertaining to behavioral change. The work by Dolan, et al. notes that these tools offered by MINDSPACE provide a pathway to implement behavioral change and should be applied within a larger framework to Enable, Encourage, Engage, and Exemplify behavioral change [Dolan 9]. In addition to these '4Es', "MINDSPACE requires two supporting actions: *Explore*, which takes place before policies are implemented, and *Evaluate*, which judges the success of the policy" [Dolan 9]. In practice, MINDSPACE "powerfully complements and improves conventional policy tools, rather than acting as a replacement for them" and may also "help identify any barriers are currently preventing changes in behavior" [Dolan 10].

(Dolan 9)

Each of the nine components of MINDSPACE affects individual decision-making. Their influence on behavior is rather subconscious since they take advantage of System 1 cognition. Furthermore, while MINDSPACE has been shown by Dolan, et al. to provide methods for developing solutions to environmental issues, it also offers an opportunity for better understanding various factors that undermine sustainability efforts. In other words, since MINDSPACE affects individual decision-making it provides a set of nine potential tools that will help expand knowledge regarding the factors inhibiting the adoption of sustainability on a widespread scale.

The following sections, as suggested by the title of this paper, focus on one these nine tools: *norms*. By demonstrating the influence of what others do on individual behavior and then finding with empirical data that the influence of what other do on individual behavior is fostering unsustainable behavior and inhibiting the adoption of sustainable behavior, the following sections will show the significant impact of

overlooked factors – in this case, norms – that obstruct society's ability to solve environmental issues.

Norms

In general terms, norms are a social practice or belief that is held by a sufficient amount of a given population and refers to a variety of behaviors that includes accompanying expectations and activating scripts. Norms are a social construct of some kind that proscribe a behavior or rule about how one should behave in a certain situation. A norm "can be formal or informal, personal or collective, descriptive of what people do, or prescriptive of behavior" and can affect social behavior in a predictable manner [Bicchieri 1]. There are thus several types of norms.

Moral norms are rules that require unconditional commitment. Such rules will be followed irrespective of empirical or normative expectations and apply to social dilemmas. The rule will thereby adhered to regardless of what others do or what others expect about the individual following the rule. Examples of moral norms include rules of commitment as well as proscriptions against murder, plagiarism, theft, and cheating on one's spouse. Most people will refuse to murder another person without regard for what they think others might do or what they believe others expect them to do.

Social norms, on the other hand, are rules that are followed only under certain conditions. They most often apply to social dilemmas, which is a situation in which there is tension between individual and collective gains and hence "often go against narrow self-interest" [Bicchieri 2]. A social norm is dependent upon "a sufficient number of people believing that it exists and pertains to a given type of situation, and expecting that enough other people are following it in those kinds of situations"

[Bicchieri 2]. A social norm is thereby shaped by situational cues and expectations of other people. While social norms are public and shared, they may not be enforced at all. If they are in fact enforced, "the sanctions are informal" [Bicchieri 8].

Social norms are contingent upon individuals knowing a certain rule exists and applies to a situation of a certain type. Furthermore, individuals have a conditional preference to follow social norms based on empirical expectations AND normative expectations (OR normative expectations with sanctions). Empirical expectations refer to whether or not an individual expects other people to follow a norm. Normative expectations, on the other hand, refer to an individual's beliefs about what others expect her to do. Moreover, normative expectations with sanctions refer to an individual's beliefs about being punished for not doing what others expect her to do. The inclusion of normative expectations (with or without sanctions) distinguishes social norms from descriptive norms. Thus, given "the right kind of expectations, people will have conditional preferences for obeying a norm, meaning that preferences will be conditional on having expectations about other people's conformity" [Bicchieri 2]. Tipping is a social norm: the amount a person leaves for a tip depends on how much an individual think others tip and her beliefs about how much others expect her to tip. As such, people will leave a larger tip on a restaurant bill in the United States than in Europe due to differing expectations in each location.

Descriptive norms, like social norms, are contingent upon individuals knowing a certain rule exists and applies to a situation of a certain type. The difference from social norms is that they rely solely on empirical expectations, and do not involve normative expectations. An individual will prefer to conform to a rule in situations of a certain type if she believes that a sufficiently large subset of the population conforms to

that rule in the same situations. A descriptive norm that is followed "is an equilibrium, in the sense that followers' beliefs will be self-fulfilling" because if a person believe the rule is widely followed, then it is in that person's interest to follow the norm, too [Bicchieri 32]. Furthermore, individual behavior will further validate these beliefs if enough people believe a rule has become a norm. Fashions and fads are both examples of descriptive norms. Hence, unlike a social norm – which "tells what others 'commonly approve or disapprove of'" – descriptive norms tell "what is 'commonly done'" [Bicchieri 63].

People follow norms for various reasons. In general, individual preferences are "*conditional* on the decision context" since "we must be 'focused' on a norm to obey it" [Bichhieri 56, 58]. While compliance may appear to be "a habit, thoughtless and automatic" or guided by feelings of anxiety for violating a norm, conformity to a norm "may be rational, and may be explained by the agents' beliefs and desires" [Bicchieri 51]. It is likely that fear of the consequences for violating the normative expectations of others, as well as the "desire to please others by doing something others expect and prefer one to do," compel compliance among individuals to follow a given social norm [Bicchieri 23]. Nonetheless, different individuals "may need different normative expectations in order to be prepared to obey a norm" and may or may not follow some norms "in the absence of any expected sanction" [Bicchieri 23]. Descriptive norms, however, are followed due to their being in the best interest of individuals involved. People conform because it makes life easier, because they want to 'fit in', because they want to do the right thing, or because others provide evidence of effective, adaptive behavior [Bicchieri 29]. This is unlike social norms, for which the reasons for

conformity "often conflict with our self-interest, at least narrowly defined" [Bicchieri 29].

Many norms are undesirable because they impose various costs on society. Such norms are "difficult to eliminate" once they have been established [Bicchieri 7]. Even though everyone may dislike a given norm and individually feel they are deviants, "they will never openly question the norm" [Bicchieri 15]. Various case studies have addressed 'anti-social' norms such as foot binding in China and female genital cutting in Africa. Since norms can be cued, it is also possible for them to be manipulated so as to remove these anti-social norms. It is important to note, however, that norms vary from place to place and thus the solutions for unraveling undesirable social norms will also differ in each culture. For example, in terms of environmental messages, "individualistic Italians are seemingly thought to be more responsive to an invitation to protect of 'private' good, whereas Swedes are expected to be sensitive to pleas for the common good" [Bicchieri 7]. Undesirable norms that may cause environmental problems in Italy and Sweden thereby require differing solutions: campaigns will emphasize the need to protect *your* or *our* environment, respectively. However, the difficulty in changing norms is heightened by the fact that when "a practice is well entrenched, we often come to attribute to it some intrinsic value" [Bicchieri 43].

Norms motivate action indirectly. They are social constructs "reducible to the beliefs and desires of those involved in its practice; if individuals for some reason stopped having those beliefs and desires, the norm would cease to exist" [Bicchieri 22]. Often it is "the *perception* of critical mass, rather than a real critical mass, that tips the balance in favor of the new [desirable] behavior. A small but vocal minority […] may

thus be enough to induce a change in mass behavior" [Bicchieri 31]. In addressing undesirable norms, identifying the beliefs and desires involved – as well as how they can be changed – will help lead to solutions for unraveling such norms. If a habit "ever ceased to serve the agent's desires according to his beliefs, it would at once be overridden and abandoned;" the persistence of a norm is due to certain expectations and preferences [Bicchieri 51]. Moreover, there is some evidence that situational variables may cue individuals for a given norm and can in so doing either induce or prevent conformity to the norm.

The Presence of Norms that Foster Un-Sustainability and Inhibit Sustainability

As has been discussed, the impact of norms on behavior is driven by the expectations or beliefs individuals hold of what others do and what they think others expect of them. The expectations regarding the behavior of others play a major, though typically underappreciated, role in individual behavior. Norms thus play a larger role an individual behavior than may be realized.

In July 2011, I conducted a survey-based experiment at the University of Oxford to address the role and effectiveness of information availability in its potential to induce more sustainable behavior among individuals. While the one purpose of the study was to determine the extent to which information availability invokes sustainable behavior and whether information provided in the form of written text/eco-labels or colors would be more effective in achieving this aim, the other primary purpose was to identify the presence of norms that foster unsustainable behavior and inhibit sustainable behavior. Moreover, if it is found that such norms exist, the question is

then whether these norms are *social* or *descriptive*. The study also investigated whether other social psychological phenomena – in this case, pluralistic ignorance – existed.

The presence of such norms, further entrenched by System 1 cognition, would support the argument made in this paper that there are certain norms inhibiting the adoption of sustainable solutions. Such a conclusion is due to the known effects of social norms and social psychological phenomena on individual behavior. Thus, if individuals were found to hold expectations that others will engage in unsustainable behavior and/or lack expectations that others will engage sustainable behavior, the evidence will suggest the presence of norms that inhibit the adoption of sustainable solutions and foster the continuation of unsustainable behavior.

The online-based survey experiment was divided into eight sections to find if the type of situation plays a role in determining which form of information availability is more effective and identifying the presence of norms. In other words, perhaps different types of norms would be apparent in differing categories of situations. The eight sections addressed reusable (tote) bags, energy use, land development, grocery store purchases, clothing store purchases, recycling, and companies.

Each section asked the 364 participants to rate their level of agreement with a set of (the same) statements using a 1-7 scale. On the scale, selecting "1" indicated low agreement with a statement, while selecting "7" indicated high agreement with the statement.

The statements spanned various categories of behavior. They addressed participants' viewpoints, likelihood of engaging in a behavior or in supporting a certain decision, expectations of others, and statements pertaining more specifically to the section at hand. Participants were also asked to rate other people's viewpoints,

likelihood of engaging in a behavior or supporting a certain decision, and expectations. The purpose of this was to determine whether there is a difference between how individuals rate statements and how they think others would rate the same statements. Thus, the intention was to detect if unsustainable norms are present.

The secondary hypothesis of the experiment related to the statements in the survey pertaining to expectations. In this study, it was hypothesized that the results would illustrate the presence of undesirable norms that foster unsustainable behavior and inhibit sustainable behavior. Such undesirable norms may in fact inhibit the widespread adoption of sustainable behavior and foster the persistence of unsustainable behavior. Furthermore, in order to determine whether the norms at play are social norms or descriptive norms depends upon whether individual decisions in this regard are made with just empirical expectations (indicating a descriptive norm) or with empirical AND normative expectations (indicating a social norm).

1) Empirical Expectations: individuals believe that others will engage in unsustainable practices and that others will *not* engage in sustainable practices.

2) Normative Expectations: individuals think that others expect them to engage in unsustainable practices and that others do *not* expect these individuals to engage in sustainable practices.

Furthermore, it was thought that pluralist ignorance might be present in terms of sustainable behavior. Thus, it was hypothesized that there would be a difference between why individuals engage in a certain behavior and why they think others engage in the same behavior. Individuals were expected to think that their own desire to engage in, their actual engagement in, and their approval of sustainable behavior is

greater than their descriptive normative beliefs (what they expect others to do in a particular situation) and their injunctive normative beliefs (what an individual expects others to approve or disapprove of) [Göckeritz 515]. These gaps in expectations, if found to be true, would support the notion that undesirable norms – that inhibit the more widespread adoption of sustainable behavior – are present are further instilled by a notion of pluralistic ignorance.

The experimental results from the eight sections supported the hypotheses pertaining to the presence of undesirable, unsustainable norms and pluralistic ignorance. In fact, nearly all prompts involving norms achieved significant. Furthermore, these results were confirmed in interviews that were held with several survey participants. Brief summaries about the results from each section will now be presented:

Reusable Bags
Disposable bags are a visible source of waste that people see everyday. When people have take away from restaurants or make a purchase at a store, they most often leave not only with their purchase but also with a disposable bag. These bags are iconic of waste in the modern day: despite the amount of energy and material that goes into making these bags, their lifespan is quite short – lasting merely from when an individual leaves the store until the arrival at home – before being thrown away or left as litter on the street. It would seem like a small shift in behavior for individuals to remember to keep a reusable bag with them in order to eliminate the need of disposable bags. Yet in practice this is more difficult than might be expected.

In terms of beliefs about using reusable/tote bags, views by participants on the likelihood of other people using these bags and their views of these bags received a

neutral rating. Participants thus did not have high expectations for others to use tote bags or others to find it important for everyone to use them. Support was built for the presence of descriptive (rather than social norms) since empirical expectations are present and sufficient to discourage the use of tote bags. Individuals find themselves significantly more likely to hold a favorable view of reusable bags, be more likely to use reusable bags, and feel better about using reusable bags than they think other people do.

Energy Use

To meet future energy demands, energy conservation is not an option but a requirement. Yet like so many efforts related to sustainability, encouraging individuals to reduce energy use is onerous. Part of the problem is that for many individuals, especially in the United States, reducing energy use seems to imply a diminishing standard of living. There are two aspects that must be considered in formulating a solution to energy-related issues. One is technological and the other, which is addressed in this paper, is behavioral. Determining the most effective ways to address energy conservation in behavioral terms is an emerging area of interest across the globe.

The results of the study support the notion that people do not expect other people to support energy conservation measures. Likewise, participants held a significantly more favorable view of energy conservation than what they expected of other people. In terms of energy use, people appear to be less likely to conserve because they have low expectations that others will conserve energy, which is also further supported by pluralistic ignorance. A descriptive norm that inhibits energy conservation thus appears to be present. Furthermore, in follow-up interviews,

participants indicated they largely do not think others expect them to conserve energy and also do not fear personal repercussions.

Land Development

Many environmental problems are directly linked to land use decisions. Roads and highways, for example, increase runoff and erosion rates, contribute to the heat island effect, divide and destroy natural habitats, and foster activities that pollute both air and water. Likewise, coastal development destroys or disrupts wetlands (that both absorb pollution before it reaches water sources and reduces the impact of storm surges) and natural habitat. People may not consider the environmental impact of land use decisions, and the aim of the section was to determine which form of information induces more sustainable decisions in this regard.

The experimental results support the notion of there being social norms that prevent the adoption of sustainable land use. Individuals believe that others are less likely to support measures for sustainable land use decisions. The appearance of descriptive norms alone seems to be sufficient in the continuation of unsustainable land development choices. Likewise, there was a significant difference between individual stances on land use decisions and the view they had of others. Pluralistic ignorance thereby seems to also help explain part of the reason why unsustainable land use decisions continue to be made.

Grocery Store Purchases

Going to the grocery store is a frequent activity. It is also a necessity for most people in order to purchase the food they need. Food production, transportation, and the disposal of food containers are also some of the major sources of water and energy use, waste production, and air and water pollution. Encouraging more sustainable

food choices is thus an opportunity to reduce the impact a person makes on the environment since these decisions are made on such a frequent basis. It will, however, probably be one of the more difficult behavioral changes to invoke.

The data illustrate the presence of undesirable norms pertaining to grocery store purchases. Participants were unlikely to believe that other people would stop buying products even after finding out about the products' detrimental environmental impact. They also expressed the belief that it was unlikely for others to necessarily read environmentally related information about the product if it were provided.

There were several findings that may demonstrate the presence of pluralistic ignorance in regards to grocery store purchases. Individuals believe they are more likely to look at and use an eco-label than other people, less likely to continue to buy the products they normally buy (that receive poor scores on the eco-label) than other people if the products that receive good scores are either more expensive or cost the same as products receiving poor scores, and that both they and also that other people will change the products they normally buy (that receive poor scores on the eco-label) when products receiving good scores on the eco-label cost about the same compared to when products receiving good scores are more expensive.

Clothing Store Purchases
Similar to food, clothing production, transportation, and the disposal of related byproducts are a major source of water and energy use, waste production, and air and water pollution. Encouraging more sustainable clothing purchases is thus an opportunity to reduce the impact a person makes on the environment. While there will be challenges with encouraging more sustainable purchasing habits for items like clothing, it will, however, probably be easier to invoke changes than for food. Clothing

is purchased much less frequently than food and is less of an established habit. There is also more flexibility in clothing choices. Choosing between a new shirt versus either choosing a different shirt or not buying a new shirt at all because of its detrimental environmental impact is one thing; choosing between bread, vegetables, or meat versus a replacement or none at all because of their detrimental environmental impact is another.

Individuals expect others to buy clothing that receives a poor score on the eco-label and that they are more likely than others to buy clothing that receives a good score. Likewise, individuals believe they are more likely than others to buy clothing that receives a good score than a poor score on an eco-label. Moreover, individuals expect others to be more likely to buy less environmentally friendly clothing regardless of whether other products in a store have high or low marks in terms of sustainability. Hence, since individuals expect other people to buy goods such as clothing made in an unsustainable manner, this makes individuals more likely to continue to purchase unsustainable consumer goods. In follow-up interviews, however, participants indicated the presence of normative expectations due to their expressed belief that others think they will buy 'greener' products. Purchasing habits may thus be shaped in part by social norms.

Recycling

Recycling is an effective way to reduce the amount of waste going to landfills and to extend the lifespan of raw materials. It enables materials to be utilized more than once, which reduces the amount of energy and material required to acquire new material. Were more products designed with a notion of recycling in mind, more products could be recycled and reutilized rather than being thrown away after a one-

time use. Recycling represents a very simple – though once again surprisingly difficult – behavioral change that would reap many benefits. All it takes is putting disposable material into one bin instead of another, yet individuals are often not only forgetful but also defiant to recycle.

The results that pertain to social norms are more favorable for recycling than the other categories of behavior addressed in the study. People are slightly more likely than not to expect other people to recycle, believe that others expect them to recycle, and think that other people will actually recycle. Statistical significance was achieved in various comparisons that may highlight the presence of pluralistic ignorance. Individuals believe they are more likely to recycle than other people, more likely to expect other people to recycle than they think other people expect them to recycle, and more likely to recycle than what they expect others to do or what they think others expect of them. Most importantly, there is a significant difference between how important people find recycling and how likely they are to actually recycle, the former being more likely than the latter. This final point may support the presence of descriptive norms – reinforced by pluralistic ignorance – that keep individuals from engaging in behavior they find important. Furthermore, interviewees indicated that they do not believe repercussions exist for not recycling. It thus seems that recycling behavior is shaped by descriptive norms.

Discussion on the Results of Sustainability Study at Oxford

The survey results reveal the presence of undesirable, unsustainable norms. The presence of these norms – which appear to be largely *descriptive* in nature – regarding sustainable behavior was supported by the data presented above in each

section of the survey-based experiment. While individuals believe that sustainability is essential and realize that action must be taken, they do not expect other people to engage in sustainable behavior. This proves sufficient to discourage people from engaging in sustainable behavior. Some behaviors, such as purchasing habits, may involve normative expectations since people in these situations do believe that other people expect them to engage in such behavior and it is in certain behaviors like purchasing habits where people are becoming increasingly 'green'. Individuals see it as important and want to use reusable bags, support sustainable energy and land use policy, make 'greener' purchases, recycle, use fewer toxic chemicals, and support sustainable companies but hold a certain set of expectations that creates a gap between what individuals desire and how they actually behave. Results from the experiment regarding expectations thus imply that certain 'norms for un-sustainability' exist and play a significant role in individual decision-making. The presence of such norms has implications in determining whether or not people in practice actually make sustainable choices: individual behavior does *not* meet the values or intentions held by individuals. The resulting gap between the desired sustainable behavior and the revealed unsustainable behavior most individuals actually engage then confirms the beliefs held by individuals of others, further entrenching unsustainable social norms. Consequently, these norms impede the adoption of sustainable solutions and cultivate the continuation of unsustainable behavior.

Pluralistic ignorance promotes the existence of undesirable social norms: individuals think that other people engage in behavior for different reasons than they themselves do. Individuals believe others do not engage in this behavior because they find it less important or are less willing to act, but do not realize that others have the

same reason for inaction as the individual: no one expects others to engage in sustainable behavior. In fact, statistical significance was achieved for nearly all of the comparisons between both an individual's own and an individual's thoughts about other people's expectations or beliefs. Individuals believe they are more likely than others to aspire to and actually engage in sustainable behavior. Further, an individual's thoughts about others are supported by the fact that other people's revealed actions match their expectations; other people do not appear to engage in sustainable behavior. Hence, individuals do not consider that the reason other people have for not engaging in sustainable behavior is the same reason as their own: other people do not engage in this behavior simply because they do not expect others to do so. Were everyone to learn that the majority of individuals want to engage in sustainable behavior and confirmation that others would in fact engage in this behavior, pluralistic ignorance would be diminished, and beneficial behavioral modifications would then likely ensue.

The concept of self-fulfilling prophecies may also play a role in the continued presence of these undesirable social norms. In particular, perceptual confirmation may be a key driver of such norms. Perceptual confirmation is the notion that an individual's perception of another's behavior confirms the expectations that the individual holds. Selective attention, weighting, memory, and interpretation – and thereby the disregard of information that might indicate differing conclusions – thus may affect how an individual perceives the behavior of others and thereby confirm the initial expectations he or she possessed. By focusing individuals' attention on the various examples of sustainability-related changes in behavior that many people are adopting and clarifying how it should be interpreted, it may then be possible to modify the expectations that individuals hold about others.

<u>Conclusion</u>

In order to most effectively address environmental issues, it is necessary to understand how individuals make decisions because environmental problems stem from the aggregate of unsustainable individual decision-making. What drives individual behavior is System 1 cognition. Individuals use heuristics to simplify the decision-making process and they make most decisions based situational factors, their perception of the situation, and toolkit of mechanical behavioral responses to the situation at hand.

Norms are an example of a factor that shapes individual decision-making. People respond to cues in their surrounding environment based on their expectations of what other people do and sometimes also what they think others expect of them. In the study conducted at Oxford, my hypothesis was confirmed that unsustainable norms – the expectations individuals have of others – are present. The presence of such norms fosters unsustainable behavior and hinders sustainable behavior. Furthermore, it was determined that empirical expectations alone were sufficient in discouraging individuals from making many environmentally-friendly choices and encouraging environmentally-detrimental choices. Hence, it appears that descriptive norms are a critical reason for continued behavior that degrades the environment. The data results also suggest that while descriptive norms help explain the continuation of most unsustainable habits, social norms may be present specifically in regards to various types of behavior such as those related to purchasing. Those that expect others to buy greener products and think that others expect them to also buy greener products will be more likely to change their behavior.

In developing more effective solutions to environmental problems, the power of norms should be employed. The key to developing such solutions "depends on knowing which situational cues trigger which norms" [Bicchieri 76]. There has been previous empirical research in which correlational and experimental findings were found regarding the effect of descriptive norms in fostering sustainable behavior. It was observed that self-reported contributions to prevent climate change (by using public transportation instead of driving) were "strongly correlated with normative beliefs about what other people did (r = .77)" [Göckeritz 515]. In another study, it was found that the strongest predictor of energy conservation was "the belief that other people are doing it (r = .45, p < .01)," even though participants "did not detect the influence of these messages" about these descriptive normative beliefs on their behavior, rating them as the least motivating reason to engage in energy conservation [Nolan 916, 920]. Furthermore, it was found that participants with very low recycling rates "recycled more after they had received information about the actual (higher) recycling rates of other residents in the community" [Nolan 914]. Thus, people are not only much more likely to adopt sustainable behavior based solely on what other people do but are also quite unlikely to know the extent to which the behavior of other people affects their own behavior.

As an example of a situation in which revealing descriptive norms would further support a behavior with adverse effects on the environment, Robert Cialdini conducted a study to address a situation in Arizona's Petrified Forest National Park, where about one ton of wood per month was being stolen. By changing the sign encouraging visitors to not steal wood from focusing on the descriptive norm (what individuals believe others do in a given situation) to the injunctive norm (what is

approved or disapproved of by others in a given situation), theft rates were decreased from 7.92% to 1.67% [Cialdini 107]. In other words, posting signs stating the *disapproval* of theft in the park instead of signs that describe *how many* people steal wood from the park sharply reduces the undesirable behavior. Thus, when an environmental problem stems from the pervasiveness in which individuals contribute to that problem, information should focus on what is approved or disapproved of rather than on how many people contribute to the problem. Injunctive norms have been, in fact, found to be "the most widely applicable in their ability to encourage specific behaviors across a variety of situations and target populations" [Bator 536].

The examples presented above illustrate the opportunity offered by norms in formulating more effective environmental policy and campaigns. Revealing information on how many people engage in a pro-environmental activity can encourage sustainable behavior. On the other hand, revealing information on what is approved of and expected by others of an individual can discourage unsustainable behavior. If "beneficial descriptive norms are fragile, and a change in the dominant, harmful descriptive norm is difficult or impractical, focusing people on social norms can become an alternative, successful strategy" [Bicchieri 68]. Such may be the case in regards to purchasing behavior by consumers. Furthermore, measures that utilize norms offer a potential method to reverse undesirable, unsustainable behavior, and promote desirable, sustainable behavior. Norms thereby offer an opportunity to compel sweeping behavioral change with minimal monetary costs. Such a strategy is worth pursuing, especially in a time when governments possess limited resources to address the emerging environmental issues of the present day.

Works Cited

Bator, Renee J., and Robert B. Cialdini. "The Application of Persuasion Theory to the Development of Effective Proenvironmental Public Service Announcements." *Journal of Social Issues* 56.3 (2000): 527-41. Print.

Bicchieri, Cristina. *The Grammar of Society - The Nature and Dynamics of Social Norms*. Cambridge: Cambridge University Press, 2006. Print.

Cialdini, Robert B. "Crafting Normative Messages to Protect the Environment." *Current Directions in Psychological Science* 12.4 (2003): 105-109. Print.

Dolan, Paul, et al. "MINDSPACE: Influencing Behaviour through Public Policy." *Institute for Government-Cabinet Office* (2009): 1-84. Print.

Göckeritz, Susanne, et al. "Descriptive Normative Beliefs and Conservation Behavior: The Moderating Roles of Personal Involvement and Injunctive Normative Beliefs." *European Journal of Social Psychology* 40.3 (2010): 514-23. Print.

Guala, Francesco, and Daniel Steel. *The Philosophy of Social Science Reader*. New York: Routledge, 2011. Print.

Hepburn, Cameron. "Environmental Policy, Government, and the Market." *Oxford Review of Economic Policy* 26.2 (2010): 117-36. Print.

Kahneman, Daniel. "Maps of Bounded Rationality - Psychology for Behavioral Economics." *The Philosophy of Social Science Reader*. Ed. Daniel Steel and Franccesco Guala. New York: Routledge, 2011. 230-47. Print.

Lukes, Steven. "Methodological Individualism Reconsidered." *The Philosophy of Social Science Reader*. Ed. Daniel Steel and Franccesco Guala. New York: Routledge, 2011. 283-90. Print.

Miller, Douglas J. "A Study on Sustainable Behavior Inducement: The Role of Information and Feedback." (2011). *Wharton School of Business*. Initiative for Global Environmental Leadership (IGEL), 15 Sept. 2011. Web. 4 Oct. 2011. <http://environment.wharton.upenn.edu/pdf/Oxford%20Study-Sustainable%20Behavior%20Inducement.pdf>.

Nolan, Jessica M., et al. "Normative Social Influence is Underdetected." *Personality and Social Psychology Bulletin* 34.7 (2008): 913-23. Print.

Thaler, Richard H., and Cass R. Sunstein. *Nudge - Improving Decisions about Health, Wealth, and Happiness*. New York: Penguin Group, 2009. Print.

Van Hees, Martin. "Explaining Institutions: A Defence of Reductionism." *The Philosophy of Social Science Reader*. Ed. Daniel Steel and Franccesco Guala. New York: Routledge, 2011. 291-302. Print.